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The Process of Adherence to Dietary Guidelines in Adult Post-Weight Loss

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By

Sylvia Rae Stevens

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The Process of Adherence to Dietary Guidelines in Adult Post-Weight Loss Surgery Patients

Sylvia Rae Stevens

Director: Janet Merritt, PhD, RN, CNS-BC

Weight loss surgery is an effective treatment approach for severe to morbid obesity based on research over the past 20 years. Effective and lasting weight loss results in significant life consequences for patients. However, most studies base the findings on changes in body mass index, improved co-morbidities, and quantitative measures of quality of life. The impact of having surgery on the lives of adult weight loss surgery patients has not been investigated using a qualitative approach, particularly about eating challenges in the post-operative period.

The research aim was to understand the process of dietary adherence of adult post- weight loss surgery patients. Grounded Theory was the research method for the study in which sixteen participants submitted to a semi-structured interview; data was analyzed using the constant comparative analysis method of Corbin and Strauss (2008) from which a substantive theory emerged. The Path was an overarching concept describing a substantive theory comprised of five distinct but circular stages: Surveying, Navigating, Discovering, Recalculating and Persevering. The major findings included that WLS patients benefit from a collaborative relationship with the surgical team, the post-WLS diet is difficult and expensive, and that after WLS, participants experience

stigma and prejudice related to the surgery particularly from members of their social support network. The substantive theory of The Path was compared and contrasted to research on recovery from other life altering conditions and found to be consistent with the phenomenon of recovery as a process of stages that persist through the individual's life. The substantive theory of The Path shared common features with The Transtheoretical Model of Prochaska and DiClemente. Implications for nursing and research were described.

This dissertation by Sylvia Rae Stevens fulfills the dissertation requirement for the doctoral degree in Nursing Science approved by Janet Merritt, PhD, RN, CNS-BC as Director, and by Janice Agazio, PhD, RN, CRNP , and Jane White, PhD, APRN-BC as readers.

Janet Merritt, PhD, RN, CNS-BC Director

Janice Agazio, PhD, RN, CRNP Reader

Jane White, PhD, APRN-BC Reader

Dedication

This dissertation is dedicated to the many people who have supported me in countless ways over the past several years and throughout my life. I am forever grateful to my parents, Don and Wendy Stevens, who encouraged me to study hard and get a good education. They always stood by me in anything I did; I wish they were here today to share this achievement with me. My siblings, Judith Stevens Everts, Margaret Stevens Peoples, and the late James Dewey Stevens, who have been behind me in every goal I ever pursued. I cherish them and love them very much.

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Table of Contents

Title Page	
Abstract	
Signature Page	ii
Dedication	iii
Chapter 1	1
Introduction.....	1
Statement of Purpose and Study Question	7
Theoretical Framework.....	7
Assumptions	8
Limitations	8
Relevance to Nursing	9
Chapter II	11
Review of the Literature	11
Morbid Obesity as a Health Care Concern.....	11
Types of Weight Loss Surgery.....	12
Review of research about WLS outcomes on quality of life.....	17
Impact of WLS on Quality of Life	18
Presurgical Eating and Other Psychological Disorder	22
Impact of Psychopathology on WLS Outcomes.....	26
The Role of Social Support After WLS.....	28
Discussion.....	30
Limitations of Review	33
Summary	34

Chapter II	36
Methodology	36
The Research Question and Study Design.....	36
Sample	39
Ethical Considerations	40
Data Management and Analysis	42
Analysis of Data	42
Promoting Rigor	43
Summary	44
Chapter IV	45
Presentations of Findings	45
Description of Participants	45
Process of Generating the Conceptual Categories	50
Constant Comparative Analysis.....	51
Achieving Saturation	52
Categorizing	54
Conceptualizing.....	56
Theoretical Categories and Reduction	59
Emergence of the Core Concept	59
Description of a Substantive Theory.....	60
Surveying.....	62
The Path Defines the Process.....	62
Ready for Something Big	63
The Method Defines the Process	67
Money Defines the Process	68
Navigating	70
The Diet is a Tool	71
Surgery as a Tool	72
The Diet is Unrealistic	74

The Diet is Expensive	75
Discovering	76
Relationship with the Surgeon/Team	77
I Want to do it My Way	81
Coming to Terms with the Changes and the Same Old Same Old	81
Surgery on the Stomach Not on the Brain.....	84
Interpersonal Relationship: The Good, The Bad.....	87
Recalculating	90
Embracing the New Body	90
The Appetite Returns	91
New Way of Socializing.....	92
Cheating But Cheating Differently than Before Surgery	94
Reengaging with Professional Support	95
Be Prepared	95
The Role of Exercise	97
Persevering	99
No Going Back	99
Not an Easy Way Out	101
It's a Marathon not a Sprint	102
Know What You're Getting Into	104
Summary	106
Chapter V	109
Methodology and Study Findings.....	109
The Core Concept, Its Relation to Existing Research on WLS and Theoretical Models	112
Relation of Study to Existing Research of Qualitative Research on Weight Loss, Maintenance and WLS.....	114
Surveying	115
Navigating	121
Discovering	126
Recalculating	129
Persevering	133
Relationship of the Substantive Theory to Other	
Process of Change Theories.....	137
The Theory of Self Recovery	138

The Theory of Self Development	140
The Process of Community Reintegration after Stroke	141
Relationship of the Substantive Theory of the Path to the Transtheoretical Model of Prochaska and DiClemente	144
Contribution to the Weight Loss Surgery Literature.....	153
Limitations	156
Implications for Nursing Practice and Research	156
Nursing Education	157
Nursing Practice	158
Policy.....	163
Research	164
Summary.....	166
Appendices	168
Appendix A.....	168
Appendix B.....	169
Appendix C.....	170
Appendix D	172
Appendix E.....	174
Appendix F.....	175
References	177

CHAPTER 1

INTRODUCTION

Adults who become severely or morbidly obese may spend years attempting to lose weight through a variety of conventional weight loss methods; often these efforts result in a temporary improvement but not permanent effective weight control.

Hopefulness and motivation for a new product or weight loss method may eventually give way to discouragement and skepticism when the weight that was lost is regained. A person suffering from morbid obesity also faces an increased risk of developing coronary artery disease, hypertension, diabetes mellitus, bone and joint disease, urinary incontinence and some types of cancer than a non-obese person (CDC, 2009; Dymex, Grange, Neven, & Alverdy, 2002; Hager, 2007; O'Brien, Dixon, Laurie, et al., 2006). Additionally, obesity is correlated with lower psychosocial functioning and mental illness such as low self esteem, and depression (Dixon, Dixon & O'Brien, 2001; Fabricatore, & Wadden, 2003; Greenberg, Perna, Kaplan & Sullivan, 2005; Puzziferi, 2005).

Obesity is determined by measuring body mass index (BMI) calculated as weight in kilograms over height in meters squared.

$$BMI = \text{Weight in kg} / \text{height in m}^2$$

According to the World Health Organization (WHO, 2006) BMI exceeding 30 is obesity while BMI above 40 is morbid obesity. Obesity has reached epidemic levels globally (WHO, 2006; Fabricatore & Wadden, 2003), and in the United States alone approximately 25 percent of the adult population is overweight with BMI measures of ≥ 30 (Dymex, Grange, Neven & Alverdy, 2002; Fabricatore & Wadden, 2003; Hager, 2007; Mulligan, et al 2005; O'Brien et al., 2006; Sarwer, Wadden & Fabricatore, 2005).

In 2006, only four states had a prevalence of obesity <20%. Twenty-two states had a prevalence of obesity equal or greater than 25%; two of these states (Mississippi and West Virginia) had a prevalence of obesity $\geq 30\%$ (CDC, 2009).

Similarly, Sarwer, et al. (2005) found that in the United States approximately 33 percent of women and 28 percent of men were obese (BMI ≥ 30 kg).

Significantly, Livingston & Fink (2003), and Chang, et al. (2008) found that overall health was an important factor influencing quality of life (QOL). According to Wolf, Kortner & Kuhlmann (2001) and Greenberg, Perna, Kaplan & Sullivan (2005), obese individuals have lower success rates with diets and weight loss efforts when they also suffer from social and psychological problems. One study found emotional eating and neurotic predisposition of obese subjects were predictive of unsuccessful outcome for all weight loss methods (Canetti, Berry & Elizur, 2009). In addition, repeated attempts at weight loss may cause or exacerbate psychological problems (Dymex, Grange, Neven, & Alverdy, 2002; Puzziferi, 2005).

Other studies have pointed to the correlation between childhood physical and sexual abuse, neglect, and trauma and morbid obesity (Hunter, 2003; Sansone, et al., 2008). Eating as a coping strategy for stress, psychological distress and traumatic events compound the challenge for the obese person seeking treatment (Larsen et.al. 2006; Masheb & Grilo, 2006). It is estimated that obesity and corresponding illness is responsible for billions of dollars in health care costs in the U.S. alone (Fabricatore & Wadden, 2003; Powers, Rehrig & Jones, 2007).

Therefore, health care professionals are challenged to initiate effective treatments for obesity. Examples of conventional treatments include life style modification, dietary intervention, physical activity, pharmacologic therapy, and behavior therapy (Hainer, Toplak & Mitrakou, 2008). However, outcomes of most medical and behavioral interventions are not effective over the long term. O'Brien et al. (2006) found that pharmacotherapy and behavioral therapies which focus on calorie reduction, improved eating practices, increased exercise, and activity all generally obtain only modest or temporary benefits at best. Likewise, Mulligan et al. (2005) found that diet therapies and/or pharmaceutical treatments, with and without organizational support such as Weight Watchers, do not effectively or permanently result in weight loss.

Inconsistent and ineffective results of conventional obesity treatments are related to many factors, not solely the individual's lack of resolve or failure to adhere to a diet and exercise plan (Lahti-Koski, Mannisto, Pietinen & Vartiainen, 2005). Bias and stigma exist in the larger society against obesity and obese individuals that may be barriers for patients to receive the most effective care available (Bachman et al., 2008; Puhl & Heuer, 2010). Approximately 25 percent of obese individuals suffer from depression. The causes of depression are varied and include genetic predisposition, imbalance in neurotransmitters, stressful life events, and ineffective coping (Videbeck, 2008). As depressed individuals seek to reduce emotional pain, eating in response to distress is common, reinforcing a cycle of eating, low self esteem, and increased frustration.

Obese persons and health care practitioners have sought other more efficient and effective approaches than traditional treatments. Weight loss surgery (WLS) is emerging

as an important and viable option for medical weight loss (Clegg, Colquitt, Sidhu, Royle & Walker, 2003; Mulligan et al., 2005). Surgeries are categorized into two methods: malabsorptive and restrictive using non-laparoscopic (open) and laparoscopic (closed) techniques (Blackburn, Hu, & Harvey, 2005; Drake, McAuliffe, Edge, & Lopes, 2006). Both methods are considered safe, minimally invasive procedures that are effective treatments for obesity (O' Brien et al., 2006). Many previous studies have reported the results of WLS or bariatric surgery on short and long term health complications and quality of life (QoL) (Dymek, Grange, Neven & Alverdy, 2002; Fabricatore & Wadden, 2003; Nguyen et al. 2006).

Interestingly, QoL is a widely used and preferred outcome measure of success of obesity treatment as it directly and indirectly affects health or health status. QoL is defined in terms of perceived sense of well-being (Haase, 2004; Livingston & Fink, 2003; Weiner et al., 2005), and many dimensions of health described below.

Several tools have been used in research to measure changes in QoL after WLS including but not limited to:

- Short Form-36 (SF-36)
- Impact of Weight on QoL (IWQoL, and IWQoL-Lite)
- Bariatric Reporting and Outcome Analysis System Test (BAROS)
- Gastrointestinal Quality of Life Index (GIQLI)
- Moorehead-Ardelt QoL Questionnaire

Most tools measure QoL on several dimensions, such as physical activity, self-esteem, sexual life, public distress, work, social functioning, and mental health. But

these tools only give a quantitative measure of change in QoL and are not sufficient to understand the challenges of WLS, and how the improvements occur.

One area of interest is social support which has been associated with assisting individuals cope with the challenges of many life altering medical conditions such as cancer, cardiovascular disease, dementia, and post-traumatic stress disorder (Beckley, 2006; Murray, 2001; Padgett, Henwood, Abrams & Drake, 2008; Rueda & Pérez-García, 2006). While social support is often mentioned as a significant factor for success in the post-WLS period, no specific details of the concept have been identified and no tool details the changes in, and significance of, social support, interpersonal relationships and coping strategies, on improved QoL of WLS patients.

Considering the life-altering consequences accompanying significant weight loss, the obese person experiences numerous psychological adjustments as body image, overall health, and interpersonal relationships respond to the change. Ineffective coping behaviors or the existence of eating disorders and emotional eating prior to surgery continue to challenge WLS patients in the post-operative period (Masheb & Grilo, 2006). Approximately 23 to 46 percent of obese individuals seeking treatment for weight loss have Binge Eating Disorder (BED) (Delinsky, Lattner & Wilson, 2005). BED and loss of control over eating were found to continue after WLS even though the behavior was greatly diminished due to the structural changes and decreased capacity of the stomach (Colles, Dixon & O'Brien, 2008). The authors found that those patients identified to have BED prior to WLS developed grazing eating behavior or eating smaller amounts of food continuously post operatively. Despite overall improvement, these patients lost less weight and reported more modest improvements in QoL ratings after surgery than non-

bingers (p. 621). Additionally, very little standard preoperative counseling has been demonstrated to specifically prepare WLS patients for coping with the intense emotional issues that arise in the post-operative period. Since it is much more difficult to binge eat when distressed in the way one might have prior to surgery, the individual may engage in a modified form of bingeing such as grazing, eating more of allowed foods or consuming high calorie liquids. Up to 20 percent of WLS patients fail to lose weight mostly due to poor adherence to the post-surgical dietary restrictions (Kalarchian, Marcus & Courcoulas, 2008). Either way, eating as a response to emotional stress remains a form of ineffective coping after WLS which may undermine or diminish the overall improvements in QoL.

There is little research which identifies the experience of managing dietary restrictions after WLS or what strategies for dietary adherence are most beneficial to patients. However, several studies recommend more education and counseling for the patient, loved ones, and key members of the social support network of WLS patients to help weather the stresses of even the most positive results (Applegate & Friedman, 2008; Puziferri, 2005; Ritz, 2006;).

Clearly more research must focus on understanding the psychosocial factors that may impact WLS outcomes. Some studies demonstrate that predisposing mental illness does not alter positive outcomes, yet others found that certain life events, stressors, and coping styles may contribute to poorer outcomes (Puziferri, 2007). The patient's relationship with food and emotional eating as coping mechanisms are factors emerging as important to the long-term care of patients after surgery (Guerdjilova et al. 2007; Larsen et.al, 2006).

Statement of Purpose and Study Questions

Weight loss surgery is an effective treatment for morbid obesity based on numerous research studies that demonstrate clear, remarkable changes in objective measures of BMI, co-morbidities, and QoL. Questions remain about factors that influence dietary adherence in the post-operative period. Therefore, a study was proposed to answer the following questions: What is the process of dietary adherence in adult post-WLS patients? Within this broad inquiry, additional questions included what coping strategies do WLS patients report as helpful in achieving adherence, and what is the role of social and professional support in dietary adherence?

Theoretical Framework

Grounded Theory (GT), as described by Corbin and Strauss (2008), was selected to provide the framework for the investigation of the process of dietary adherence in adult post WLS patients. Grounded Theory is commonly employed in qualitative studies as a means to guide the investigator's approach to the research question with a clear, unadulterated perspective and to be open to what the population of interest will reveal about the concepts. Further, a GT approach seeks to understand and identify more about this population and coping strategies that have not previously been investigated from the perspective of those who have had a specific experience, in this case WLS. A qualitative study using GT allows the investigator to approach the area of concern with open-ended questions to learn from those who are living the experience (Bigwood & Buckroyd, 2005). Grounded Theory does not use or assume to create a specific tool or instrument to measure the variables of concern. Rather the data comes from interviewing the subjects, asking broad opening questions from those who are living with the condition, informing

the data and allowing the researcher to identify parallels, patterns, themes, and commonalities among those interviewed . In GT the method includes conducting an investigation into the question by analyzing participants' words, affect, behavior and context to guide the inquiry which may lead to theory about the phenomenon (Speziale & Carpenter, 2007). In an attempt to understand the process of dietary adherence in patients who submitted to WLS, the researcher must hear directly from subjects to grasp and objectify the data through interpretation and coding (Chiovitti & Piran, 2003).

Assumptions

Assumptions that form the basis of the study are:

1. Dietary adherence is a process which can be described and reflected upon by the WLS patient.
2. WLS patients are honest in reporting their experience of dietary adherence.

Limitations

The investigation was limited to the WLS population in one large mid-Atlantic metropolitan area. Additionally, those who agreed to participate may have been more highly motivated to tell their story, either because they had positive outcomes and/or they desired to help others prepare for post-operative WLS challenges. Those who had less positive results may not have stepped forward to participate and therefore important information may have been lost as to how they were coping with and why they had less successful outcomes. Finally, the investigation was limited to talking to subjects who agreed to face-to-face interviews which may restrict the generalizability of the findings; some subjects may have refused to participate because they felt uncomfortable with the live interview method.

Relevance to nursing

Nurses working in medical, surgical and mental health settings will benefit from understanding factors that contribute to successful outcomes in WLS. The intention is to develop a useful guide for nursing practice to improve the quality of care as well as quality of life of adult WLS patients during the post-operative period.

For nurses, it is crucial to consider not only a patient's physical changes in weight loss after gastric bypass, but also the patient's perception of whether his or her life has changed and in what way (Hager, 2007, p.772).

Nurses play an important role on the WLS or bariatric surgery health care team. Evidence-based nursing research can open the door to better knowledge and implementation of interventions by nurses at all levels of practice. Research conducted by nurses in the specialties of primary care, surgery, mental health and community health will provide essential practice guidelines that will benefit current and future patient groups-from populations at risk for obesity and the inherent co-morbidities to the patient presenting for WLS. Finally, the current body of research about the benefits to QoL after surgery indicates that WLS is rapidly becoming an accepted and possibly preferred form of treatment for morbid obesity (Clegg, Colquitt, Sidhu, Royle, & Walker, 2003). Nurses, armed with the understanding of the beneficial outcomes of WLS to overall health and QoL, can serve as counselors and advocates to patients. Nurses may also work more effectively with WLS patients to design an effective plan to adhere to dietary

guidelines in the post-operative period and for the challenges inherent in this life transforming treatment.

CHAPTER 2

REVIEW OF THE LITERATURE

In order to thoroughly examine the question of “What is the process of dietary adherence in adult post-weight loss surgery patients?” it was important to consider the issues affecting this population. What is morbid obesity? What are the types of surgery offered to treat obesity? What are the outcomes of WLS on QoL? Are pre-surgical eating disorders and behaviors and other psychological factors common after surgery? What is the role of the significant other and social supports during the post-WLS period?

Therefore, the literature review for this study focused on the following areas: (a) morbid obesity as a health care concern, (b) the main types of WLS surgery performed and the criteria most widely accepted to become a candidate, (c) QoL changes after surgery, (d) the effect of pre-surgical eating behavior and other psychosocial factors on surgical outcomes in the post-operative period, and (e) the role of the significant other and social supports during the post-operative period.

Morbid obesity as a health care concern

Obesity is a significant public health concern increasingly targeted by health professionals for aggressive research and intervention (CDC, 2010; Sarwer, Wadden & Fabricatore, 2005; WHO, 2006). Obesity rates have reached epidemic proportions in the United States with most states reporting that 22-25 percent of the population, including children and adolescents, are obese (CDC, 2010). It is estimated that if current trends continue, by 2030 over 86 percent of adults in the United States will be obese, costing an estimated \$860 to \$956 billion or over 17 percent of total health care costs (Wang,

Beydoun, Liang, Caballero & Kumanyika, 2008). Certain demographic groups are projected to achieve even higher rates of obesity and resulting co-morbidities by 2030 including 97 percent of African-American females and 91 percent of Mexican-American males.

Additionally, there are approximately three million morbidly obese individuals in the United States. Morbid obesity is defined as a BMI ≥ 40 (NIDDK.gov, 2012). Individuals with morbid obesity suffer similar or worse comorbid conditions such as heart disease, diabetes, sleep apnea and gastroesophageal reflux than others with less severe obesity. Patients who do not lose weight with conventional or surgical interventions suffer new or worsening comorbid conditions than those who are treated and achieve significant weight loss (Burk & Wang, 2011).

Traditional treatment methods such as dietary interventions, physical exercise programs, lifestyle modifications, behavior therapy, and medication are not effective for long-term weight loss (Dymex, Grange, Neven & Alverdy, 2002; Fabricatore & Wadden, 2003; Powers, Rehrig & Jones, 2007)). Weight loss surgery, also known as bariatric surgery, is increasingly recommended for morbid obesity. In 2008 approximately 220,000 weight loss surgeries were performed in the US (WebMD, 2010).

Types of weight loss surgery

The literature describes a myriad of procedures for surgical weight loss. The two main categories are restrictive and malabsorptive procedures with two methods most often requested by patients and recommended by surgeons (Blackburn, 2005; Khan, Madan & Tichansky, 2008). The first is the laparoscopic adjustable gastric banding

procedure (LAGB) a restrictive method, and the second is a combined restrictive and malabsorptive approach known as the laparoscopic Roux-en-Y gastric bypass (LRYGB).

The LAGB, a restrictive method, involves placing a band at the uppermost part of the stomach dividing it into two sections. The upper section is a small pouch into which all consumed food first enters. The food then slowly passes into the lower, larger remaining portion of the stomach to be digested. Because the capacity of the upper pouch is only about 30cc, the amount of food consumed by the patient after surgery is restricted considerably. Periodically the band may require readjustment which can be accomplished through inflating or deflating a saline filled balloon that surrounds the inside of the band (Ethicon endosurgery, 2006). Patients who choose this procedure are counseled to eat less, eat slowly and limit consumption of fluids, especially carbonated beverages. Advantages of the LAGB are that it is accomplished by making a very small incision through the abdomen, making it less invasive with a short post surgical recovery period. The major disadvantage of the LAGB is the ease in which the small pouch may stretch allowing larger quantities of food to be consumed if the specific dietary guidelines are not followed.

A newer restrictive method, the vertical sleeve gastrectomy (VSG) involves removal of about 75% of the stomach with the remaining portion looking like a tube or sleeve. It is also performed laparoscopically but unlike the LAGB which can be removed, the sleeve is nonreversible. The VSG was initially conceived to be a first step procedure followed by LRYGB. However, recent studies have suggested it is effective as a standalone procedure. Advantages of this method are that it is minimally invasive,

reduced costs, and successful weight loss. However, doubt remains about the long-term success of VSG and gastroesophageal reflux is a common and often limiting adverse event post surgery (Lee, Cirangle, & Jossart, 2007).

The LRYGB procedure, the most popular and successful of all WLS methods (Tice, Karliner, Walsh, Petersen & Feldman, 2008), involves creating a small pouch at the uppermost part of the stomach followed by attaching a Y-shaped section of the small intestine to the pouch enabling food to bypass the lower stomach and the duodenum or the upper section of the small intestine, and to enter the jejunum or the middle section of the small intestine directly (Toth, 2004). The bypassed portion of the stomach is stapled off and divided from the small pouch. The LRYGB is reported as the “gold standard” of WLS by many authors because of the greater success reported by patients in achieving weight loss and in maintaining lost weight over many years (Blackburn, 2005; Ethicon endosurgery, 2006). Disadvantages of LRYGB include poor absorption of iron and calcium leading to deficiency diseases, particularly anemia and osteoporosis; “dumping syndrome” which is triggered when too much or sugary food is consumed and rapidly enters the small intestine leading to nausea, weakness, fainting and diarrhea; and irritation or ulceration of the gastric mucosa from the buildup of bile and gastric secretions outside the stomach. LRYGB is a more invasive procedure than LAGB or VSG, thereby requiring a longer post-operative period. The surgeon makes several small incisions into the abdominal wall and uses similar laparoscopic tools as the banding and sleeve procedure.

The choice of WLS procedure is based on a variety of factors not the least of which is the pre-surgical presentation of prospective candidates. Khan, Madan, and Tichansky (2008) reviewed the literature to learn why patients choose LGAB or LRYGB and found that choice of WLS technique is influenced by patient and or surgeon preference; patient knowledge obtained from formal and informal sources, such as surgical center information sessions, internet sites, friends; cost (LAGB is less expensive than LRYGB although more insurance providers cover the latter procedure); desire for short post-operative recovery, and, overwhelmingly, desire for effective weight loss. The authors of this review recommended more research, particularly randomized clinical controls, to determine effectiveness of one procedure over another.

The literature most consistently reports the following criteria for an individual to become a WLS candidate:

1. Age of 18 years of older
2. $BMI \geq 40$
3. $BMI \geq 35-40$ with two health co morbidities (National Institutes of Health, 2010)

Other criteria set by most surgical centers include that the prospective candidate:

1. Has failed non-surgical weight loss efforts
2. Is motivated, informed and realistic
3. Presents a medically acceptable risk described as:
 - a. Ages 18-65
 - b. 400lb weight limit

- c. No previous gastrointestinal surgery
- d. Limited co morbidities

(Long, 2009)

Although infrequently performed on children or adolescents, WLS is offered to a select group of adolescents between the ages of 14-18 years, based on BMI ≥ 35 and serious health conditions including depression (Zeller, Roehrig, Modi, Daniels & Ing, 2006). Among the pediatric hospitals offering WLS to adolescents who meet the criteria is Children's National Medical Center in Washington, DC (Children's National Medical Center, 2009).

Notable omissions in the criteria listed among the most widely followed sources are mental health or illness status. This is of particular concern since major depression is included among the co-morbidities for candidacy for WLS (Dymex et al., 2002). However, a psychological assessment with a licensed mental health provider is required by most surgical programs as part of the admission requirement (Lanyon, Maxwell, Karoly & Ruehlman, 2006; Long, 2009; Murray, 2003). Additionally, some mental illnesses and conditions have been identified as contributors to poor surgical outcomes such as active symptoms of schizophrenia, illicit drug use, and severe mental retardation (Bauchowitz, et al., 2005).

Prospective candidates diagnosed with eating disorders such as bulimia nervosa or binge eating disorder, are not excluded from WLS programs, although some research indicates poorer outcomes for those with these conditions (Eddins, 2009; Kalarchian, Marcus & Courcoulas, 2008; Larsen et al. 2006). Anticipatory counseling of candidates

with reported eating disorders has been recommended to address problem eating behaviors that may arise in the post-operative period (Harvard Mental Health Letter, 2008). One literature review of psychosocial and behavioral aspects of WLS (Sarwer, Wadden & Fabricatore, 2005) reported that up to 50 percent of WLS candidates admit to some type of eating disorder including BED or Night Eating Syndrome.

Pre-operative diet and nutrition counseling are standard in most WLS hospitals. When a candidate is accepted for surgery the individual is encouraged to attend educational and support groups attended by others awaiting surgery as well as by those who are at various months or years post surgery (Foreyt, Walker & Poston, 1998; Long, 2009). In order to qualify for insurance reimbursement for the surgical costs, some candidates are required to demonstrate presurgical weight loss of ≥ 10 pounds (Long, 2009). Some authors have described the qualifying standards of WLS, especially those imposed by third party payers, to be burdensome and prohibitive for many who would benefit from the treatment (Lynch, Stoll, & Colditz, 2011; Powers, Rehrig & Jones, 2007).

Review of research about WLS outcomes on quality of life

Many studies selected for inclusion in this review used at least one of several Quality of Life (QoL) tools with some studies analyzing pre- and post surgical scores. The quantitative tools most frequently found in research on WLS outcomes were:

- Short Form-36 (SF-36),
- Impact of Weight on QoL (IWQoL, and IWQoL-Lite)
- Bariatric Reporting and Outcome Analysis System Test (BAROS)

- Gastrointestinal Quality of Life Index (GIQLI)
- Moorehead-Ardelt QoL Questionnaire

Several studies reported QoL ratings for subjects post surgery; those that conducted repeated measures were examined for follow up procedures and maintenance of sample size over time. Many studies followed and continued to measure QoL from ≥ 3 months post-op to 72 months.

Impact of WLS on QoL.

In one of the few randomized clinical control studies included in this review, a Swedish surgical team conducted a matched-pair analysis of 52 gastric bypass patients and 52 laparoscopic band patients (Muller, Wenger, Schiessere, Clavien & Weber, 2008). Each group was assessed using standard post-operative WLS measures such as changes in BMI, SF-36, and the Moorehead-Ardelt II. The authors found similar outcomes for each group three years following surgery leading them to conclude that both WLS procedures result in comparable QoL outcomes which are similar to normal population measures.

O'Brien et al. (2006) reported on a 2 year follow up of 80 mild-to-moderately obese patients randomly assigned to WLS (lap band) or intensive non-surgical medical WL treatment. The surgical group demonstrated a 21.6 percent reduction in BMI at the 2-year follow-up while the non-surgical group reported a 5.5 percent reduction in BMI. Further, the non-surgical group had statistically significant improvements on the SF-36 in only 3 domains (physical functioning, vitality and mental health) while the WLS group had significant improvement in all eight domains of the scale. The authors concluded that

WLS can be effective for treating mild-to-moderate obesity. The current standard criteria for WLS in most surgical centers is BMI >40 or ≥ 35 if the person has at least two co morbidities. While the authors did not specifically recommend WLS over non-surgical treatment of mild-to-moderate obesity, they suggest that the current criteria for patients seeking surgery to treat obesity should be modified.

Another clinical control study from a Taiwanese surgical team study compared QoL measures of 114 patients seeking WLS one month prior to surgery to normal non-obese controls of similar demographic makeup. Higher BMI scores were associated with lower QoL rankings on the World Health Organization QoL scale, Taiwan version. The authors concluded that the health related QoL for obese patients is far lower than for non-obese controls. Specifically, a BMI over 32 correlates with very low QoL scores. The authors recommend that WLS be considered for obese patients in the mild-to-moderate range (Chang, Hung, Chang, Tai, Lin & Wang, 2008).

Similarly, Barretto-Villela et al. (2004) compared 95 moderately-to-morbidly obese subjects at a pre-surgical stage ($N=66$) with subjects at up to a 12 months post-WLS ($N=29$) on the SF-36. Patients in the pre-surgical group had markedly lower QoL scores than the post-surgical group, particularly on the dimensions of functional ability, vitality, and general health.

Among the few qualitative studies found, Pastoriza & Guimaraes (2008), using a semi-structured interview approach, studied eight patients who had WLS at least one year earlier. In this Brazilian nursing study, questions focused on perceptions of changes in self-esteem, physical activities, social activities, disposition at work, affect, and sexual

relations. The study also sought to learn what impact the male nurse who followed the patients after surgery had on these self ratings. Improvements in all areas were identified as was the positive impact of the support provided by the nurse during the post operative period. The authors did not address what challenges WLS patients faced related to dietary adherence or coping with stress.

Numerous meta-analyses and systematic reviews address WLS outcomes on QoL dimensions. Buchwald, Avidor, Braunwald, Jensen & Pories (2004) conducted a review of 136 studies from 1990 to 2003 to determine the impact of bariatric surgery on weight loss, operational mortality, and changes in co-morbidities-diabetes, hypertension, hyperlipidemia, and obstructive sleep apnea . They concluded that along with effective weight loss, a majority of WLS patients have a complete resolution of the co-morbidities or significant improvement. Post-operative complications could not be determined from the review.

Tice, Karliner, Walsh, Petersen & Feldman (2008) examined 14 comparative studies from 1966 to 2007 to evaluate patient outcomes for laparoscopic adjustable gastric banding and Roux-en-Y gastric bypass. They concluded that the gastric bypass surgery had better weight loss outcomes and lower reoperation rates. However, short-term morbidity was lower and post-operative recovery shorter with the lap band procedure. The authors did not examine what if any impact patients' eating behavior had on the outcome of the surgery and what coping strategies were most helpful in establishing dietary adherence.

In a review focused on quantifying the financial burden of obesity in North America, against the medical and cost-effectiveness of bariatric surgery, Powers, Rehrig & Jones (2007) sought to promote changes in regulations and accreditations for WLS programs. Among the findings:

1. The direct costs of obesity represent a substantial cost comparable to the economic burden of other diseases, such as cancer.
2. Obese workers had 5.1 additional days of work loss and \$2230 higher annual medical costs than non-obese workers.
3. Compared with surgery, the efficacy of commercially available self-help weight loss programs and prescription bariatric medications are inferior.

Additionally, the authors found that only a fraction of clinically appropriate patients (about 0.6 percent) are treated surgically because of reimbursement restrictions of private and government third-party payers. Laparoscopic surgery methods are more cost-effective than open gastric bypass procedures by about 25 percent.

“ . . .for morbidly obese people who have costly co morbid conditions, operative therapy offers a large potential benefit in quality of adjusted life-years and saving total medical expenses incurred by the patients and their employers (p. 333).”

The authors suggest revisions in guidelines to promote standards and evidence based practice for high volume bariatric surgical centers (> 387 WLS per year) which have lower complication rates and mortality than low volume surgical program (< 118 WLS per year).

Presurgical eating and other psychological factors.

Sarwer et al. (2005) conducted a review of the literature of the pre-operative characteristics of WLS patients and post-operative outcomes. They focused on psychosocial issues, existence of psychopathology and eating disorders, limited knowledge of nutritional guidelines, and unrealistic expectations for surgery. The authors reported that up to 50 percent of WLS patients have a pre-surgical eating disorder that may persist after surgery. Additionally, the authors made recommendations for more research to understand psychosocial factors that may impede positive outcomes for WLS patients with significant psychological impairment.

Niego, Kofman, Weiss & Geliebeter (2007) reviewed the literature about the coexisting problem of binge eating on patients seeking WLS and post-surgical outcomes. Thirty-two studies were examined in the review which found a correlation between pre and post surgical binge eating and poorer surgical outcomes for this population. Further, the review revealed that a significant percentage of WLS candidates engage in binge eating and, despite the generally positive outcomes even for these patients, surgery does not treat this problem; post-surgical counseling is insufficient to assist WLS develop strategies to change this disordered pattern of eating.

Greenberg, Perna, Kaplan & Sullivan (2005) sought to understand how behavioral and psychological factors affect outcomes for patients seeking WLS and the role of mental health professionals on the surgical team. Seventeen papers from 1980 to 2004 were reviewed which reinforced the assumption of lower self esteem ratings and high depression rates among obese patients. The authors recommended that mental health

assessment and counseling be incorporated in obesity surgery programs to enhance compliance, outcome, and QoL. They did not specify the types of post operative counseling or support groups that were most beneficial to WLS patients.

Guerdjilova, et al. (2007) sought to characterize emotional eating and coping behaviors in WLS patients. Using a retrospective chart review, data was collected from 50 patients who submitted to the laparoscopic Roux-en-Y procedure to identify patterns of emotional eating and strategies to cope. Patients were questioned again six months post-WLS. The results were analyzed in terms of multiple factors including amount of weight lost and lifetime psychiatric status. Patients reported using three main types of coping strategies for emotional eating-oral, sedentary and physical activity with sedentary activity chosen by 42 percent of respondents. Patient outcomes on other variables did not show significant differences across the three methods of coping. This study did not explore subjects' experience of or factors which cause the onset emotional eating.

Using a structural equation model, Canetti, Berry, & Elizur (2008) compared psychosocial predictors of and psychological adjustment between subjects who had WLS (N=44) and those in a conventional diet program (N=47) one year after treatment. Findings included that emotional eating was a mediating factor and negatively impacted weight loss outcomes of both treatment groups.

A few qualitative studies examined health related physical and emotional changes after WLS. A mixed method approach was chosen by Ogden, Clementi, Aylwin & Patel (2005) to explore the factors underlying the success of WLS on health status. Twenty-two patients who had submitted to WLS in the previous four years were matched with

thirty-nine subjects on a waiting list for surgery. In-depth interviews of fifteen WLS patients were also conducted. The authors reported that WLS subjects reported lower BMI and higher ratings on overall health than controls. Additionally, the qualitative data revealed the WLS patients felt their relationship with food had changed due to the strict post-surgical dietary protocol resulting in a change in subjects' perception of food and improved sense of control over how they eat. The authors emphasize the significance of how WLS shifts control of eating behavior from the individual's conscious choice to the stomach capacity which is altered by the surgery. Despite positive associations with the dietary guidelines, the authors did not learn about how those guidelines helped WLS patients avoid urges to eat in response to emotional stress.

Using a phenomenological approach, Wysocki (2005) examined the lived experience of choosing WLS. Eight individuals, five women and three men, who had WLS one year earlier, agreed to participate in an open-ended interview describing the experience of choosing surgery for obesity. Four themes emerged in the analysis—"last resort", "surgery provides structure", "reality sets in", and "positive about the decision to have the surgery" (p. 28). The author concluded that health professionals working with WLS patients must understand the affirming nature of the experience to provide support and reinforce the necessary structure for successful WLS outcomes.

Larsen et al. (2006) surveyed 157 patients at an average of 34 months post-WLS to test a model of exercise beliefs and eating patterns as mediators of binge eating and physical exercise. Participants completed numerous scales including an aggregate of subscales from the RAND Short Form 36 (SF-36) and Binge Eating Scale (BES).

Findings included that many WLS patients have a life history of using food to cope with stress and to provide comfort. Surgery and the highly restrictive dietary program that follows caused high levels of emotional stress that may activate this automatic ineffective coping strategy. Exercise was not found to be a mediator of stress as most subjects reported no pattern of using exercise as a coping strategy. This study reinforced recommendations from other researchers who advocated expanding the criteria for eligibility for WLS (Canetti et al., 2008; Chang et al., 2008).

Sutton, Murphy & Raines (2009) interviewed 14 female subjects who had RYGB, obtained through purposive sampling, between 12 and 24 months earlier. The authors of this nursing study used a phenomenological approach to explore the experience of WLS and were interested in determining if method of surgery, laparoscopic or laparotomy had any impact on perception of the outcome. They conducted semi-structured interviews using a “grand tour” approach (p.300) asking the following questions:

- Tell me about your experience immediately after your surgery?
- What happened in the 6 months and beyond following surgery?
- How were things as you approached the 1-year anniversary of your surgery?
- How are things going for you today?

Respondents who submitted to laparotomy RYGAB procedure experienced more post-operative pain than those with laparoscopic surgery. Themes that emerged from the analysis of the data included that subjects having either method experienced more pain in the immediate post-operative period than anticipated and that they experienced mood

swings ranging from “buyer’s remorse” to feeling overwhelmed about the demands of the diet and self care required after WLS. As time post-surgery increased, subjects’ descriptions of physical health and sense of emotional well being were generally positive; a major theme was change in relationship with food. Another significant finding was the description of social support fading as time goes on which adds to the emotional burden of WLS patients. The authors’ recommendations included provision of individualized and holistic nursing care to WLS patients in the post-operative period. Some significant limitations of this study were small sample size, only women subjects recruited, and interviews of 20 to 40 minute duration.

Two doctoral dissertations used a mixed method approach to examine the lived experience of adult females with rapid weight loss after gastric bypass surgery (Keish, 2005; Toth, 2004). Participants completed a battery of questionnaires to determine eating and weight problems, and QoL issues post operatively. The former used in-depth, unstructured, open-ended interviews to discover themes that focused on the decision to have surgery and the changes in QoL from before surgery to several years after. In the latter study, focus group interviews of the 36 participants, three months to one year after surgery, uncovered psychosocial challenges such as transformation in identity, disruptions in social life, and loss of a relationship with food. Both authors recommend enhanced perioperative support for the patient and his/her significant others.

Impact of psychopathology on WLS outcomes.

Puzziferri (2005) estimated that five percent to 30 percent of WLS patients fail to lose weight as expected or are unable to maintain the weight loss. The author attributed

most failures in WLS to psychological issues or psychiatric co-morbidity. Further, the author advocated that surgical teams provide long-term follow-up with patients. citing the phenomenon of WLS patients who regain weight at the 18 month- post surgical mark. Additionally, the author identified risk factors which contribute to poor WLS outcomes, specifically high environmental stress and lack of social support.

In contrast to these results, Love, Love, Bower, & Poston (2008) examined post-WLS outcomes of 116 subjects based on psychological factors by comparing one group prescribed psychotropic medication ($N=48$) for depression and another without treatment ($N=68$) at three time periods-prior to surgery, six months, and one year post operatively. The Medical Outcome Survey Short Form (SF-36) was administered to both groups. No measurable difference in outcomes occurred between the two groups leading the authors to conclude that depression or psychological factors are not predictive of benefit from WLS.

Three studies by Sansone, Schumacker, Widerman & Routsong-Weichers (2008) investigated psychosocial histories of WLS patients focusing on binge eating disorder (BED), borderline personality disorder (BPD), childhood trauma and quality of parental caretaking, and prevalence of self-harm behaviors. The authors found that in a sample of 121 predominantly female WLS patients about 65 percent had BED while almost 25 percent met the criteria for BPD. These patients had higher BMI measures during presurgical assessments.

In the study of childhood trauma and quality of parenting the authors found a correlation between high BMI and experience of trauma of various types-emotional abuse

(43 percent), witnessing violence (39 percent), sexual abuse (19 percent), physical abuse (17 percent) and physical neglect (nine percent). Implications of these findings included poorer coping strategies that can result in poor surgical outcomes.

In yet another study of the same sample, self harm behaviors were assessed, specifically sexual promiscuity (22 percent), self-defeating thoughts (21 percent), alcohol abuse (19 percent), and engaging in emotionally abusive relationships (16 percent). The authors concluded that while a minority of WLS patients displays self-harm behaviors, those who scored positive for these factors needed further assessment for readiness for surgery.

These studies provided some of the most descriptive data about stressful life circumstances that are implicated in the onset of and maintenance of obesity, and the concomitant emotional problems. How the maladaptive coping behaviors were experienced by patients after WLS was not examined. This would seem to be an important area of research.

The role of social support after WLS.

One study examined interpersonal relationship issues that WLS patients encounter after significant weight loss. Patient concerns about changes in sexual intimacy, increased conflict with spouse or partner, and risk for divorce were identified. Finally, while the authors conclude that research demonstrates that most WLS patients experience improvements in the romantic relationships, they and their spouses/partners need ongoing support, education, and counseling to promote communication (Applegate & Friedman,

2008). The authors did not inquire about what kind of counseling or support would be most useful to patients and significant others.

A prebariatric surgical psychological evaluation was detailed by Ritz (2006) to assist patients gain perspective on the realities of the life altering consequences of WLS. Recommendations included that the evaluation include a developmental history, assessment of social integration, willingness to access available supports, psychiatric history, coping skills and psychological resources.

In a qualitative study, Lynch, Chang, Ford & Ibrahim (2007) used focus groups to examine the perceptions of African American women about weight loss and bariatric surgery. Forty-one participants were recruited through a partnership with a community group to recruit African American women >18yrs and BMI >30. Six focus groups were formed and, using a Grounded Theory approach, used semi-structured interviews and asked questions including, ““What goes on in your life that makes it difficult to lose weight? What would influence you to consider weight loss surgery for yourself?’ ” (Lynch et al., 2007) Themes identified included lack of time, access to resources, lack of self control, identifying with a larger body size consistent with the other adult women in their family and social network. Other findings included that age correlates with motivation to lose weight; younger respondents said improved physical appearance motivated them while older participants gave desire for improved physical health as a strong motivator. The authors recommended that weight loss professionals and surgical teams increase their awareness of the sociocultural differences among potential

candidates in order to develop more culturally competent programs for minorities seeking treatment for obesity.

Discussion

Weight loss surgery is increasingly common as a treatment for morbid obesity and related comorbidities. The literature reviewed demonstrated that the most commonly performed types of surgery are the LAGB, VGS, and LRYGAB with the latter reported as the most successful method for lasting weight loss. Criteria for surgery is limited to adults ≥ 18 years of age and ≤ 60 , the severely obese ($\text{BMI} \geq 40$) and with serious those co-morbidities. However, there is an increasing demand for the surgery among the pediatric population, particularly adolescents with severe comorbidities. There is a dearth of randomized clinical controls comparing WLS outcomes of various surgery techniques or for individuals who have mild to moderate obesity with those with morbid obesity and severe co-morbidities.

There is some research to suggest that broadening the criteria and offering WLS to those with mild to moderate obesity would be beneficial in reducing post-operative complications and resolving co-morbidities more effectively (Canetti et al., 2009; Chang et al., 2008). Other research recommends improving cultural competence of weight loss professionals and surgery teams to make treatment more accessible to minority groups (Lynch et al., 2007).

Research has demonstrated that surgery as a treatment for morbid obesity has positive outcomes on health, self esteem, social relationships, and functionality. Most reviews of adult post-bariatric surgical patients specific to QoL suggest improvement for

all patients across socioeconomic, cultural, and nationality domains. When these same patients are followed from one month to seven years post operatively, QoL in general continues to improve. Two studies found a threshold for some components of QoL; there was a plateau at 6 months and between six months and one year intervals, and again at 18 months to two years (Eddins, 2009; Puzziferi et al., 2006). But in general research demonstrates that WLS results in significant improvements on physical functioning, self-esteem, public distress, and total score.

The few qualitative studies reviewed (Canetti et al., 2009; Keish, 2005; Ogden et al., 2005; Sutton et al., 2009; Toth, 2004; Wysoker, 2005) presented the most personal and rich descriptions of WLS patients and the successes and challenges, particularly emotional hurdles, in the post-operative period. For instance, despite achieving desired weight loss goals, patients struggled with physical pain in the immediate post surgical period, experienced mood swings, and fear which eventually gave over to a sense of relief and positive sense of well-being. However, as the time after surgery increases, availability of social support to help cope with the emotional ups and downs diminished.

The qualitative studies reviewed were limited by low sample size, non-diverse sample in terms of gender or race, and methodology problems. The qualitative data, however, provided detail not available in the quantitative data that universally reports improvements in QoL after WLS.

This review is important for health professionals to understand the advantages of WLS and also for the population in general. As stated before, there is an obesity epidemic in the United States which reaches across age, gender, race and culture-even the

pediatric population (Hager, 2007). Since obesity is so widespread it is essential that the benefits of WLS be reported in not only the medical literature but in general public health education programs. While it is essential to educate the public about the health risks of obesity and to continue to promote healthy life styles which emphasizes diet and exercise, it is unrealistic to think that prevention or behavior change alone or combined will solve the obesity epidemic. Yet most obese patients continue to seek and/or receive more conventional weight loss treatments. In fact, recent studies have found that a fraction of the patients who meet the criteria for WLS are actually receiving the treatment (Power, Rehgi & Jones, 2007) due, in part, to resistance among third-party payers to reimburse for surgery. Patients who have insurance coverage must meet prohibitively long and difficult standards before receiving approval. Additionally, some primary care providers, who often must recommend and refer patients for surgical treatment of obesity, are slow to embrace the procedure.

Added to these institutional obstacles is the public perception of WLS as an easy way out for those who don't have the discipline to stick with a diet and exercise routine. Stigma is a serious problem among obese patients often causing some to postpone seeking medical help regardless if the condition is related to obesity (Bachman et al., 2008; Puhl & Heuer, 2010). Obese patients often suffer depression which further exacerbates their difficulty in seeking effective treatment. While the research overwhelmingly supports WLS as an effective treatment for obesity, most studies use quantitative, objective measures to determine outcome. Only a few of the studies examined in this review took a qualitative approach using phenomenology or Grounded

Theory to identify the experiences behind the ratings of various scales. These studies identified concerns and successes such as employing coping strategies to ward off eating in response to stress (Guerdjilova et al., 2007; Larsen et al., 2006; Masheb & Grilo, 2006) and change in relationship with food, and improved sense of self control (Ogden et al., 2005). However, only two studies included interviews with subjects about stressors and challenges that contribute to or risk poor dietary adherence which may limit the success of the surgery. First hand descriptions of post-WLS patients is lacking particularly about eating in response to emotions and or stress. The experience of and efforts to adhere to the post-surgical dietary guidelines has not been investigated in WLS patients.

Quantitative studies indicated that pre-surgical emotional eating behavior and other problem eating patterns can adversely affect WLS outcomes.

Limitations of review

There were many limitations found in the review of research on this topic. There were few randomized clinical trial studies to compare conventional weight loss treatments with surgery. Most studies did not report inter-rater reliability. Some of the studies did not report any standard deviation nor mention maintenance of data integrity. Not all the specific interventions and important statistics were reported in the studies. Most studies were from medical journals. Further, this review found that the surgeons from surgical centers were doing the research on their own patients making some of the data more prone to bias. For instance, would a patient be more likely to report positive results on the various measures knowing that his health care provider was soliciting this information? Psychologist, nutritionist, and nursing studies dwarf those conducted by

physicians. Given that nurses are interested in issues of QoL for many important health care concerns, it is remarkable that as a health care profession nurses thus far are not more actively involved in studying the impact of WLS on this important outcome.

Clearly more research must occur to understand the psychosocial factors that may impact outcomes of WLS. Some studies demonstrated that predisposing mental illness did not alter positive outcomes, yet others seemed to warn that certain psychiatric conditions and/or life events, stressors, and coping styles may contribute to poorer outcomes. The patient's relationship with food and eating as a coping mechanism are two factors which are emerging as important issues to address in the long-term care of patients after surgery.

The role of the significant other after WLS has not been adequately explored. In fact, numerous studies recommend more education and counseling for the loved ones of WLS patients to help weather the stresses of even the most positive results (Applegate & Friedman, 2008; Puzziferi, 2005; Ritz, 2006). There also is little research which identifies the type of social support that is most beneficial to patients undergoing WLS in coping with post-surgical stress and problem eating behavior.

Summary

This chapter presented a critical review of the literature focused on areas: (a) morbid obesity as a health care concern (b) types of WLS surgery performed and the criteria most widely accepted to become a candidate, (c) QoL changes after surgery (d) the effect of pre-surgical eating behavior and other psychosocial factors on surgical outcomes in the post-operative period, and (e) the role of the significant other and social

supports during the post-operative period. While numerous studies reviewed confirm the benefits of WLS to treat morbid obesity most were quantitative inquiries with little investigation into the experience of following the post-WLS dietary guidelines. The few qualitative studies reviewed were limited by small and non-diverse sample sizes. The research in this review confirmed the need for investigations, using a qualitative design, to learn more about the real life experience of WLS patients in following the dietary guidelines and factors which impact dietary adherence.

CHAPTER III

METHODOLOGY

The purpose of this chapter is to describe the methodology used in this study. The chapter will include a discussion of (a) the research question and study design (b) sample (c) ethical considerations and (d) procedure for data collection and analysis, and (e) summary.

The Research Question and Study Design

The proposal was for a qualitative study using Grounded Theory to understand the process of dietary adherence in adult post-weight loss surgery patients.

Evidence continues to emerge that weight loss and eating behavior patterns shift around 2 years post-surgery and more prospective and long-term research is needed. Eating disturbances that begin or reemerge following surgery are often associated with lower overall reductions in weight and BMI and more weight regain (Niego, Kofman, Weiss & Geliebter, 2007, p. 357).

Previously, the author and colleagues conducted a systematic review of the literature to examine improved QoL in adult WLS patients (Jean-Pierre, Stevens & Tanatwanit, unpublished manuscript, 2007). Findings of the review were based on 14 studies that included improvements not only in terms of reduced body mass index (BMI), and lower co-morbidities, but significant changes in psychosocial variables such as occupational, social, and sexual functioning. However, most studies included in the

review were quantitative and conducted by researchers who served WLS teams from major medical research centers in the United States, Europe, and South America.

Grounded Theory (GT) was selected as the appropriate method to guide the inquiry of this study which is based on the theoretical framework of symbolic interactionism (SI). In SI a phenomenon is understood from face-to-face interaction with those who are part of the event or experience. The aim is to focus on the interaction with and the meaning of the event from those living the experience (Blumer, 1969). The theory was derived from the Pragmatic School of philosophy of John Dewey and George Mead during the first half of the 20th century. Dewey and Mead sought to elucidate a philosophy of knowledge based on action and interaction with phenomena. Pragmatism was an outgrowth of the Hegelian tradition in philosophy of the dialectic process (Kaufman, 1988) in which a concept is observed and experienced for what it is, what it is not, and the continuous reflection of the concept through repeated encounters with an observer. Pragmatism promoted the notion of reflective thinking as the way to problem recognition and resolution (Corbin & Strauss, 2008). Dietary adherence after WLS has not been the qualitative focus of other research; GT serves as a starting point to learn about the phenomenon through interaction with those who experience the problem.

Grounded Theory starts with the data generated from a question about a particular type of experience (Chiovitti & Piran, 2003). The methods used in GT include listening to and analyzing the participants' words which guide the inquiry which may lead to theory about the phenomenon (Speziale & Carpenter, 2007). In an attempt to understand dietary adherence in adult WLS patients, the researcher must hear directly from subjects going through the experience to grasp and analyze the data through interpretation and

coding. The study attempted to do this by interviewing adult post-WLS patients and asking them to describe the process of dietary adherence since their surgery.

Further, a researcher using GT as a theoretical framework, seeks to become aware of an experience from those who have the problem or concern. As awareness sharpens through analysis of subjects' words and of the process of the interviews, the researcher is able to identify core concepts with the potential to develop a theory about the experience (Corbin & Strauss, 2008).

Questions were broad and with the possibility of being modified over the course of the interviews based on respondents' answers. Comments and descriptions led to logical follow-up questions to focus more clearly on the experience. Such questions or prompts were designed to allow the subjects to provide a true narrative of their experience so that they can be heard, examined and thematically identified (Chiovitti & Piran, 2003). A goal of this study was to add to the nursing, WLS team, and consumer literature. Another goal was to assist in developing necessary educational and counseling strategies to prepare and support persons and members of their social support system for the life altering consequences of significant weight loss and the accompanying changes in eating, activity, self-image, emotional responses and interpersonal relationships.

A qualitative study using GT approaches the area of concern, the process of dietary adherence by WLS patients, with open-ended questions in order to learn from those who are living the phenomenon. Grounded Theory does not use or assume to create a specific tool or instrument to measure the variables of concern (Speziale and Carpenter, 2007). Rather the data came from interviews with and the review of the subjects' descriptions of going through the experience, informing the data and allowing

the researcher to identify parallels, patterns, themes, and commonalities (McMullen, 2009). The investigator analyzed these data points and the researcher's reactions to the interviews which were detailed in field notes; both guided the inquiry that led to a substantive theory about the phenomenon. Through repeated review and comparison of interview transcripts and field notes, a set of criteria emerged that guided the investigator toward an understanding of phenomena. From the analysis of data, the initial coding, identification of concepts, and conceptual categories, an overarching concept emerged.

In the current study, the investigator conducted a thorough personal analysis of assumptions and beliefs about the research question. Through bracketing, these assumptions and beliefs remained on the periphery so that the data obtained from the interviews led the analysis and subsequent concept identification (Speziale and Carpenter, 2007).

Sample

The sampling approach for the study was a combination of theoretical and purposive methods. These methods were employed to capture the essence of the experience of dietary adherence after WLS from those who were living the experience. Another sampling approach, snowballing, in which participants referred or suggested other individuals who might be interested in the study, generated a few inquiries as well. Recruitment sites included three WLS hospitals in a major mid-Atlantic metropolitan area; the investigator also sent flyers (Appendices A and B) and announcements to primary care providers and mental health professionals in the area, and to an established, secure weight loss surgery web site, ObesityHelp.com. The selection criteria of potential subjects included:

- Adults ages 18-65.
- Have completed any type of WLS, laparoscopic roux-n-y gastric bypass, vertical gastric sleeve or laparoscopic gastric band, at least 3 months before the interview.
- Be conversant in English

These criteria emerged in the researcher's earlier review of the literature and anecdotal interviews conducted at two WLS centers. As the interviewing process progressed the researcher learned more about the phenomenon which resulted in refining the sample (Walton, 2001). Specifically, after eight interviews, the investigator consulted with her dissertation chair who recommended that she attempt to recruit participants under the age of 40 years. Consequently the investigator pursued participants of this age group as well as from diverse racial and ethnic backgrounds. Since qualitative research seeks to understand a phenomenon not previously described and defined, the sample size cannot be projected until sufficient interviews are completed and saturation of data occurs. Based on the review of qualitative studies on similar questions of weight loss and WLS patients, it was anticipated that the sample size would be between 10 and 30 (Bigwood & Buckroyd, 2005; Herriot et al., 2007; Ogden, Clementi & Alywin, 2004). After completing sixteen interviews, the investigator consulted again with her dissertation advisor and received permission to end data collection.

Ethical Considerations

The investigator sought and received permission to conduct the study from The Catholic University of America Office of Sponsored Programs and Research Services

Committee for the Protection of Human Subjects. Permission was also sought from the corresponding boards of WLS hospitals identified as sources for recruiting participants. The investigator sent the proposal and all accompanying documents to each WLS medical director who in turn consulted with the research committees of the respective hospitals. The researcher was granted permission to recruit subjects without submitting to an IRB process of the hospitals from which participants were sought.

When individuals presented as potential participants, the investigator sent a letter with a description of the study, including the provisions of protection of human subjects, and a consent form (See Appendices A and C) to each one. When individuals agreed to participate, the interviews were arranged to accommodate them as much as possible, and maintain confidentiality. The investigator did not proceed until she received the signed consent form from each participant. All interviews closely followed the proposed interview guidelines described in Appendix D. Prior to beginning each interview, the investigator reviewed the consent process again to ensure that the participants understood the nature of the study, especially the audio recorded format. Each participant granted permission again verbally. The investigator reviewed the consent process again during the interview if the participant appeared to be experiencing any emotional distress. Each participant consistently verified their consent to continue the interview and all completed through the end of the semi structured interview guide.

There was a modest remuneration of \$35 in the form of a gift card to a large department store given to all participants at the end of an interview. The remuneration was consistent with other research on similar populations and was deemed to be neither

excessive nor exploitative of the participants. (Kavanaugh, Moro, Savage & Mehendale, 2006)

Data Management and Analysis

All interviews were audio taped, and copied to a CD; the investigator placed them in a secured locked cabinet only available to her. No identifying information was included on any of the data storage tools. A numbered coding system was created by the investigator to track each interview. The investigator sent audio files to a professional transcription service which was thoroughly investigated for maintaining ethical conduct. The files were sent to the transcription service electronically and final transcriptions were received via an email account only accessible to the PI. No names or identifying information were included in the electronic audio files sent to the transcription service. Upon completion of the study all interviews were erased from the digital recorder; the CD's and typed transcriptions will be destroyed upon successful completion of the author's dissertation defense.

Additionally, the investigator created field notes after most interviews, reflecting on unique or unexpected events which transpired, if any, during an interview. These field notes were attached to the typed transcriptions and used as a reference during the analysis process.

Analysis of data

Descriptive statistics of subjects were obtained including subjects' age, race, gender, and time since surgery, marital status, occupation, education, preoperative BMI and current BMI. Descriptive data were tabulated and reported in a table in Chapter IV. After each interview, the PI reviewed and submitted the data to the constant comparison

method of Corbin and Strauss (2008) in which each interview was compared for similar data and themes against each other. This process was repeated for each interview to determine differences and similarities of responses to the questions. Additionally, the investigator kept detailed field notes. The data was coded using the multi-level analysis method of Corbin and Strauss (2008). The analysis began with the first interview with a line by line review of the transcription and audio recording. Using the same review technique, each successive interview was compared and contrasted with the previous ones which eventually led to identification of concepts and a substantive theory of the process of dietary adherence after weight loss surgery.

Promoting Rigor

Promoting rigor in the analysis of the data required that the investigator describe the methods of data collection and analysis accurately and clearly, as well as the process of coding and categorizing data. The investigator's aim was to be transparent in describing how the study was conducted and data managed, and as necessary, submitting to a review by more expert researcher to determine if correct research standards are followed (McMullen, 2009; Ryan, Coughlan & Cronin, 2007). The investigator met with her dissertation chair and second reader three times during the data collection and analysis process to ensure consistency and accuracy in the research process. Additionally, the PI shared sections of Chapter IV with the nurse manager of one hospital weight loss surgery program to confirm that findings were consistent with the clinician's knowledge of the population based on his many years of interacting with WLS patients.

Summary

This chapter described the methodology used in the study. The theoretical approach of Grounded Theory was used to understand the phenomenon and examine the data. The purpose of the study was to learn about, describe and analyze the experiences of those who have had WLS to treat morbid obesity, specifically to identify the process of dietary adherence. The sample consisted of sixteen participants who met the criteria. Ethical concerns and efforts to ensure the protection of the participants were detailed. Sixteen participants submitted to a semi-structured interview of open-ended questions. Data analysis followed the constant comparative method of Corbin and Strauss (2008) which resulted in a substantive theory describing the process of dietary adherence of adult post weight loss surgery patients.

Chapter IV

PRESENTATION OF FINDINGS

The purpose of this chapter is to describe the findings related to the question: What is the process of dietary adherence in adult post-weight loss surgery patients? The discussion is presented in three sections: a) description of the participants, b) description of the process of the generating the concepts and conceptual categories, and c) description of a substantive theory.

Description of Participants

Participants were recruited, as stated in the methodology section, using a combination of purposive sampling, through contacting nurse managers or health care professionals at or associated with weight loss surgery programs, and snowballing. During the entire recruitment and interviewing process, the PI was deeply moved by the participants' willingness to share their experience of WLS and how they are creating their roadmap for success. Additionally, the investigator interpreted the speedy manner with which most WLS patients responded as a sense of urgency to report what really goes on after WLS. At first the PI assumed she had been fortunate to engage participants who had been successful and therefore wanted to share their experience because they had nothing but positive stories to tell. But as the interviews took place, the PI learned it was not only the successful individuals who had something to say, but also those who had struggled and continue to struggle to make their way to weight loss success. The less successful or struggling participants created an image of a process that is extremely difficulty, at times painful, and always frustrating. However, despite the hurdles, every participant agreed that WLS was well worth the adversity and was changing their lives in

ways they could not have imagined. The take home message for the investigator was, “WLS-it’s a major life change that is well worth the challenges.”

Three prospective participants who requested or required special accommodations did not meet the criteria stated in the flyer and consent form. Two individuals who volunteered had not met the time frame criterion, one having had surgery less than 3 months prior to the recruitment and the other exceeding the 3 year time frame. Sixteen individuals who met the criteria for participation (see Appendix B) were interviewed over the course of 5 months. Demographic data, including gender, age, method of WLS, time since WLS, and pre and post WLS BMI measures is presented in Table 1. The sixteen participants are listed in order of interview and given pseudonyms to protect their privacy Other information collected in the demographic form included educational level, racial identity, marital status, employment status, age when diagnosed as obese, and co morbidities.

Participants ranged in age from 32 to 62, with an average age of 47 years. Females made up 81 percent of the participants while males were 19 percent. Racial identities were divided between Caucasian (69 percent) and African American (31 percent). Education level ranged from having attended college to completion of a PhD degree. Participants were mostly employed and working in an array of occupations and professions such as administrative aide, graphic designer, college professor, and petroleum engineer. Married participants made up 44 percent of the group with 31

Table 1.
Demographic Data

Participant	Gender	Age	Type or WLS	Months since WLS	Pre WLS BMI	Post WLS BMI	Net BMI change
1(Kelly)	FE	52	Lap Band	24mos	43.8	30.1	13.7
2(Ruth)	FE	62	Lap Band	26mos	53.8	39.8	14
3(Meryl)	FE	52	Lap Band	26mos	38.9	28.3	10.6
4(Eddie)	M	60	Gastric Sleeve	14mos	45.4	30.5	14.9
5(Jackie)	FE	49	Gastric Sleeve	9mos	42.2	29.1	13.1
6(Sonya)	FE	56	Gastric Sleeve	13mos	48.5	33.8	14.7
7(Maya)	FE	42	Gastric Sleeve	7mos	68.5	43.9	24.6
8(Marilyn)	FE	56	Lap Band	14.5mos	43.2	33.7	9.5
9(Luther)	M	50	Gastric Sleeve	15mos	46.1	28.4	17.7
10(Greta)	FE	47	Gastric Sleeve	8mos	59.5	38.6	20.9
11(Abbie)	FE	44	Lap Band	15mos	37.2	35.7	1.5
12(John)	M	47	R-en-YGB	30mos	61.6	30.1	31.5
13(Sloane)	FE	32	Lap Band	13mos	41.6	31.7	10.2
14(Star)	FE	62	Lap Band	30mos	44.5	35.1	9.4
15(Catherine)	FE	53	R-en-YGB	19mos	35.1	21.1	14
16(Judy)	FE	33	R-en-YGB	22mos	51.7	32.2	19.5

percent reporting never being married; 25 percent were divorced. Only one participant was unemployed but reported progress in reentering the work place since having WLS.

Many participants could not recall the age at which they had been diagnosed as obese but reported the onset of weight concerns starting in childhood and adolescence with most stating they had struggled with excess weight since their late twenties. Comorbidities most commonly reported were hypertension (75 percent), bone and joint problems (50 percent), sleep apnea (38 percent), diabetes (31 percent), and asthma and depression (19 percent each).

Most arrangements for the face-to-face interviews were made via email or phone. Once the date, time and location were set the primary investigator (PI) sent a confirmation email the day before the interview was scheduled or called the participant to confirm the appointment. The participant was usually willing to describe an item of clothing he or she would be wearing to be easily identified. Once PI and participant made contact, they ordered a beverage if the meeting took place in a restaurant or café. Many participants brought their own food or beverage, and a few purchased beverages and/or food. Two interviews took place during mealtime, one lunch and the other dinner, both in restaurants. The participant who preferred to be interviewed in her home had prepared a light snack which she invited the investigator to partake of as the interview progressed. It was interesting that the food this participant prepared was a mixture of items allowed or required on the post WLS diet *and* non allowed items such as muffins and sweet breads. This simple meal was shared by the PI and participant during the interview. Later the PI reflected on the participant's generosity and hospitality as an illustration of adapting by hosting and eating socially with others who did not have such

harsh dietary restrictions. It conveyed that she was comfortable in her ability to control what she ate while in the presence of another who did not have dietary restrictions. The PI likened this to the process of the recovering alcoholic who continues to socialize with friends and family who consume alcoholic beverages all the while maintaining sobriety. This particular participant was one of the most adamant about finding a way to break the rules but stay adherent to the goal of WLS-to shed excess weight. This concept will be discussed in detail later.

The interviews were conducted following the process described in Chapter III and as outlined in Appendix D. Interviews were reviewed by listening to the audio recording immediately after each meeting; no significant alterations were made in the semi-structured approach. Throughout each interview the PI strove for neutrality while attempting to elicit more specific descriptions of experiences to capture as much detail as possible. More personal, subjective reflections were noted in field notes (FN) and memos.

At the end of each interview participants were given the \$35 gift card to a large retail store as stated earlier. Everyone accepted the “thank you” gift, some stating they had forgotten about the offer or had not read the statement in the consent form about any such remuneration but graciously accepted it anyway. Others clearly anticipated the gift card and revealed the excitement they felt about being able to shop for themselves in popular retail stores since they had WLS. Losing significant weight and dropping clothing size, in some cases by 10 or 12 sizes, no longer limited them to shopping in catalogs or stores that sell clothing for large people.

Many participants inquired as to when the study would be finished and if they could read the final version. The PI stated that with their permission, she would contact them when the study was completed and the dissertation successfully defended. Several stated they wanted to be contacted and offered assistance to anyone interviewed who might express the need for support in coping with the aftermath of the surgery. This almost universal altruism of the participants illustrated the sense of a common bond they felt with others who have struggled with obesity and opted for or may be considering WLS as a path to successful weight loss. Participants recognized that the post-weight loss period is a lonely experience and that a kindred spirit can be helpful to someone coping with the challenges before and after WLS. Additionally, the PI wondered if this desire to reach out and help others was based on the lack of support most obese individuals receive from friends and loved ones when grappling with weight loss, and how they suffer from weight stigma. The role of social support is detailed in the discussion below.

Process of Generating the Conceptual Categories

The purpose of this study was to answer the question, “What is the process of dietary adherence in adult weight loss surgery patients?” Corbin and Strauss (2008) define process as, “An ongoing flow of action/interaction/emotions occurring in response to events, problems, or a part of reaching a goal (pg. 247)”. They also describe that the action/interaction/emotions paradigm may be altered by events or conditions that require adjustments in how the respondent achieves the goal (pg. 97). This interplay of action/interaction/emotions is particularly fitting for the research question of this study because participants wrestle with myriad factors that required adjustments and

recommitment to the goal of achieving meaningful, lasting weight loss. As time progressed, the WLS patients interviewed described obstacles they confronted, reacted to, found solutions for, all the while reflecting on the meaning of the process, and recognizing they had a reserve of emotional and physical fortitude not previously recognized in themselves. In some cases, participants recognized that they had developed effective coping strategies while living as a morbidly obese person which served them well in their efforts to maintain dietary adherence after WLS. This concept will be discussed below.

Constant Comparative Analysis.

The method of constant comparative analysis involves comparing the data from the first interview against that of all following interviews (Corbin & Strauss, 2008). The recorded interviews were listened to shortly after the conclusion of each and compared against the previous one (s). Memos were created to describe the investigator's response to the interviews focusing on unique or novel statements made by the participants as well as similar ones from previous interviews. Reactions to the interview or reactions to characteristics of participants as they responded to the questions were also included in memos. Each interview was transcribed by a professional transcriptionist, with all identifying data removed prior to sending. The transcriptions were read, reflected upon by the PI and compared against prior ones and reported in analytic memos. Field notes written immediately after interviews also documented the investigator's reflections about the participant, the interaction, and emotional reactions. For instance, one FN written after interviewing participant Greta noted, "The dark side of food addiction. One type of addiction is similar to another and how relapsing after WLS caused feelings of self

loathing.” This kind of notation about how the participant struggled with food as an addiction generated a need to reassure the participant that the investigator did not judge her, although the PI refrained from doing this. However, thinking about the pain expressed by the participant assisted the PI to become more empathic to the experience of stigma and criticism endured in the participant’s life, mostly from her family. As successive interviews occurred and were reviewed little of this “dark side” was found again, but was added to a list of first level coding in case it emerged in successive interviews. The concept was later refined and folded into the category of “social support-the good, the bad”.

More often the comparison of interviews yielded similarities that when heard were saved as first level codes; this process of listening, comparing, identifying new concepts continued until no new data or codes emerged.

As the review of each interview, memos and FN’s progressed, a list of 44 concepts emerged as common threads in the data (see Table 2). The concepts were often direct quotes, words or phrases of the participants that were considered to best illustrate the emerging data.

Achieving saturation

Interviews and coding continued until a wide swatch of individuals of varying age, gender and race were interviewed, and until no new concepts emerged. Interviewing a diverse cohort of adult WLS patients ensured that the PI was not making assumptions or that the experience of dietary adherence did not have specific cultural or gender variations. When the interviews yielded no new codes, concepts or categories, the PI

determined that saturation of data had occurred, and no more interviews were scheduled.

Data collection ended after completing sixteen interviews.

Table 2

First level coding concepts

The path paves the way for the process	Follow the money	Trust	The appetite comes back
The path directs the process	The diet is hard	Be prepared	Managing cravings
New me	Insurance dictates type of surgery	Punishment not effective	Stress and coping
Not an easy way out	Self pay as financial incentive to and asses post WLS life	Marathon not a sprint	Dumping syndrome
Ready for something big	Preserving energy and emotion over time	Move on from mistakes	Feeling sick
Tipping points	Personalizing the rules but living by your own	Make adjustments	Surgery on the stomach not the brain
Ah-hah moments	Getting past the plateaus/boredom to stay on track	Eat foods you like not just what Dr says	Boredom
The method directs the process	Adaptation pre and post surgery	The role of exercise	No going back
Diet of high proteins, low carbs and portion control as a tool	Technology	The role of alcohol	Failure
Not a diet, it's a tool	Media	Social support <ul style="list-style-type: none"> • Good • Bad 	Unlearning old diets
Dietary guidelines are unrealistic	Positive relationship with surgeon/team	The value of selective informing	Knowing what you're getting into
			Looking back to stay on track

Categorizing

This first level coding gave rise to a rudimentary structure of stages or steps participants go through to achieve dietary adherence after WLS. Corbin and Strauss (2008) discuss coding as a tool to integrate context, process and theory. “The paradigm provides cues for how to identify and relate structure to process. It suggests looking for key words that signal a line of action or an explanation for something, then following that thought through in the data (pg. 90).” As the interviews were reviewed and compared against each other and notations made in memos and field notes, the investigator imagined being in the experience of the WLS patient managing the challenge from day to day, month to month, year to year. The first level concept “It’s a marathon not a sprint,” provided a meaningful analogy for the PI who had completed two marathons more than 10 years prior to the study. Recalling the original enthusiasm with which she entered the marathon training process and actually running the event provided clues to what it was like for the participants to elect to do something for which they had limited experience or knowledge of the difficult path ahead.

A series of overarching categories began to emerge in the data to illustrate the paradigm of key concepts identified to the process of dietary adherence after weight loss surgery (See Table 3). The categories emerged out of the 44 original concepts that seemed not only to fit neatly within the category headings, but to illustrate the transmutation of the individuals living the experience. That WLS surgery creates an entirely new challenge and opportunity to achieve a long desired goal than in previous weight loss efforts means the individual is impacted in ways that are at once profound and mundane. The experience is still about diet, exercise and fighting the demons of past

Table 3

Cluster of first level coding and corresponding categories that describe the process of dietary adherence

Cluster of first level coding	Corresponding conceptual categories
The path directs the process	The path paves the way for the process
Ready for something big; Not an easy way out	
Tipping points/Ah-hah moments	
Not a diet, it's a tool; Throw out the old rules	The method directs the process
Dumping syndrome: The Good/The Bad	
The dietary guidelines are unrealistic	
The dietary guidelines are hard	
The diet is expensive	Money influences the process
Money/Insurance dictate method and timing	
Don't blow it	
Playing by the rules but living by your own	Doing it my way
Personalizing the rules as confidence grows	
Getting past the plateaus/boredom to stay on track	
Being a good patient, at first	
Finding yourself in the midst of dramatic change	
Technology; Trust; The role of exercise	
Positive relationship with surgeon/WLS team	
Be prepared; Make adjustments	Adaptation pre and post surgery
Marathon not a sprint;	
Punishment not effective	
Move on from mistakes; Changed my life	
Reality TV/Biggest Loser	
Hunger comes back ;Late night cravings	
Return of the appetite; The role of alcohol	Reality sets in/Coming to terms with the changes and the same old same old
Cheating: An option; Different than before surgery	
Dumping syndrome	
Unintended consequences	
Failure/complication	
Coping with stress/emotional conflicts	The weight comes off but the real weight, emotional weight is still there
Food police/uninvited experts	
New ways to socialize/ "Swimming class"	
Revising the self image	Embracing the new body while wrestling with the old brain
Surgery on the stomach not the brain	
Social support: The good/The bad	
Converted more observant of the unconverted	
The value of selective reporting/confiding	Recalling/revisiting the path to keep on track
The role of professional support	
No going back	
Know what you're getting into	

successes and failures, but with a new twist on the experience-the surgery-a sort of antidote to the weight struggles that transmutes confidence and resolve to the individual.

Conceptualizing

Further analysis and reflection on the general categories gave rise to refining and revision. The PI responded to the experiences described as though she had been invited to walk briefly with each participant through their path to achieve effective weight loss. On her “walk” with each participant, the PI could more accurately understand that the process of dietary adherence was dynamic, with a continuous set of stages that participants revisit through the remainder of their lives. Review of FN’s and memos contributed to the establishment of a structure from which to understand each person’s “walk” and the commonalities of their journeys. For instance, after interviewing the first male participant, the field note entered was: “Struck with how different his responses were; very little or no discussion of stress or food as coping. More on keeping focused through educating self on best protein options. Also this man seemed acutely aware of the limited food options, but accepting of these limitations; nothing about weight stigma.” However, the second male participant described a very emotional experience which contrasted with the first male participant’s more methodical stance. “More emotional about weight loss than previous male participant; I felt the impact of this person’s emotions as more significant perhaps because it was so different from the reactions of other male participants.” Lastly, the PI noted similarities that were emerging about personalizing or making the diet their own as certain responses became frequent and familiar such as, “Often hear that there has to be a small ‘cheat’ here and there but

nothing so significant that they get off track, except for participant #6 who admitted to eating a full bag of candy, and buying food in grocery store that is not allowed.”

After interviewing Greta, which was among the most overtly emotional of the interviews, the PI wrote, “This was the first time I thought I might have to stop an interview. Greta became increasingly emotional and had to fight back tears when talking about emotional stressors she’s experienced since the surgery, as well as prior to WLS. However, each time she regained her composure and went on to discuss her transformation. I tried not to interrupt just kept listening and asking questions.” This FN reinforced the impression that the participants had something to say, and emotional or not, wanted their voices heard. They were teaching the PI and future readers of the study about their lives, their defeats and their victories, but mostly about their commitment to creating a better life for themselves.

Additionally, memos were scoured for the PI’s process of working with the data. An example follows:

Memo 8/11/11: the process of establishing identity similar to how the individual does in early life from primary object. The surgeon is the lifeline to the new person, but at some point, pts need to take on their own accountability and find a way to be successful in their own way which may not always please the surgeon,

The concept of “playing by the rules but making them your own” sprang from the participants who adamantly said they must be in control of the dietary process or they are sure to fail. The surgery helps them maintain control but the methods of control are unique for each individual.

Another memo written toward the end of the second level coding reveals a crystallization of the path directing the process as key to moving forward.

8/30/11: Continuing to review interviews and finding that I'm looking for an analogy or metaphor to describe the way WLS pts view themselves in their decision. The fact that so many comment on the stigma of the surgery itself, for example that others say it is an easy way out, makes me wonder how in the long term they overcome the bias or the expectation of others that they will fail. This is a common description of the participants; they have tried every diet, every exercise program, and although briefly successful, regained all the lost weight and additional lbs. How do they persevere despite their own and the expectations of others who have lost faith in them? I'm thinking, "Too big to fail" or something like this to go along with the idea that WLS is such a major event that they are more committed to succeed than at any other time in their lives. "Too big to fail" may also be a way to describe the life or death status of many who were literally on a downward course with their weight and co-morbidities. They had to do something big-as stated by one participant-and WLS was it.

Through review of memos and interviews the PI learned that WLS adds a totally new twist on the diet. Many participants described it as a tool. As the concept of "the tool" was further refined it became clear that surgery presented a whole range of challenges for each participant: good and bad. Meeting the challenges is the process which results in a unique "walk" or "path" for each individual.

Theoretical categories and reduction

With the construct of process in mind, the PI reviewed and reflected on the dynamic variables that occur to reveal the experience. The original categories were refined, collapsed and reduced as stages of the process and labeled: Surveying, Navigating, Discovering, Recalculating and Persevering. These five stages describe a fraught and rewarding process. Because achievement of a defined weight loss goal is not an end point, but a transition to and commitment to the goal of adherence, the process continues for an undetermined time, perhaps for the rest of the individual's life. The stages are not experienced in a step by step linear fashion rather they are like substations or pit stops that offer opportunities to reflect and find direction when the participant arrives. Within these stages, key bio-psycho-social factors influence movement in and out of the stages. One may never achieve the goal, and, thereby, never reach the end; one revisits each substation en route to new challenges and goals.

Emergence of the Core-Concept

An overarching theme or concept emerged to describe the process: The Path. The concept of The Path connotes movement, through the past and present that the individual wanders before and after WLS. Path was chosen as opposed to road because it conveys a more personal, roughly sketched at first then refined and mapped out route to a destination, whereas a road is a manmade or well worn conveyance to a particular destination with proscribed entryways and exits. The Path starts many years before the individual seeks WLS as a method to achieve more successful and enduring weight loss. It is not only to achieve body size reduction, but a journey of discovery of the self, from enduring the emotional and physical challenges of being an obese person, to experiencing

previously unknown or lost parts of the self after significant weight loss has occurred. Additionally, many participants spoke about the decision to have a particular method of surgery by describing the path they traveled with the surgeon. As the PI reviewed and reflected on the participant's experience the image of a path, dynamic and unique, was repeatedly visualized; a sort of "Yellow Brick Road" that at first one is directed to by the surgery team, but later that must be navigated and recalculated as obstacles and shortcuts are discovered. Therefore, the core concept describing the process of dietary adherence of adult post WLS patients is The Path. The core concept will be compared and contrasted with other research and theoretical models in Chapter V. The five conceptual categories or structure of The Path will be described and illuminated through presentation of verbatim portions of interviews and the PI's analysis of the key process stages.

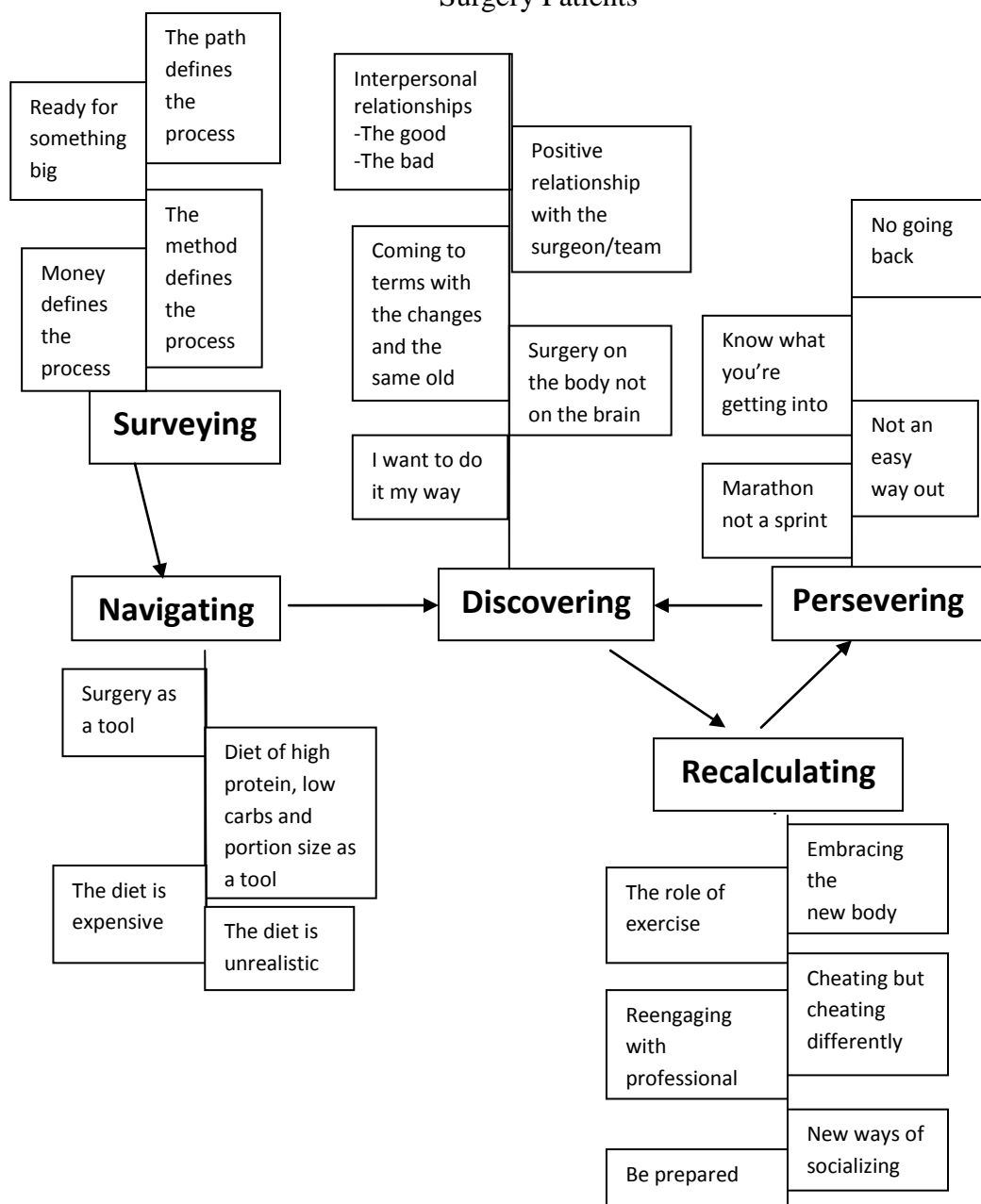
Description of a Substantive Theory

The overarching category of The Path forms the basis for a substantive theory which consists of five interwoven stages or substations in support of a goal-dietary adherence after WLS. The five stages are Surveying, Navigating, Discovering, Recalculating, and Persevering.

To provide clarification of the process, each category will be described separately with identification of the connecting threads.

Figure 1. Model of The Path

The Process of Adherence to Dietary Guidelines in Adult Post-Weight Loss Surgery Patients



Surveying

Concepts encompassed in Surveying are (1) the path defines the process (2) ready for something big (3) the method (of WLS) defines the path and (4) money defines the process,

The path defines the process.

All of the participants described what their lives were like prior to having WLS. Most had lived for two, three even four decades with morbid obesity, while a few gained weight during adulthood after the birth of children or with changes in living standards that, in some cases, afforded them less time to exercise and, in others, just no longer paying attention to diet and exercise. Kelly described the phenomenon of weight “creep”,

From the time I started having babies, which was in 1980, I have truly struggled. I’ve never been one to vary a great deal at a time. In other words I’ve just been that gradual, you know a few pounds over the winter, a few pounds during vacation. Certainly the babies—I’ve actually had four pregnancies, three successful. With each pregnancy came, you know, additional 20 or 30 pounds that didn’t necessarily all come off. So it’s been a gradual process, so in my mind that’s (laughs)—it’s kind of funny—almost a detriment. In other words I didn’t just gain oh wow, over the winter I put on 80 pounds, it was just that little bit, little bit, little bit.

This statement illustrates the pre-WLS movement that led to the decision to have surgery. Most subjects spent many years trying various diets with varying success, frequently describing the phenomenon of “Yo-yo dieting”, that is, losing substantial weight, such as 50 pounds, but regaining the lost pounds and in most cases, even more weight. Meryl shared her experience:

I was a yo-yo dieter. I was not a fat child, I was a size 6X and weighed 40 pounds at nine years old and they actually took me to the doctor to find out

why I couldn't gain weight. When my mother worked for Weight Watcher's she used to take me to meetings with her, she was a leader, a lecturer. Coming to terms with being obese was really hard for me because for so many years of my life I could eat what I wanted without thinking and then... Well, I was diagnosed as obese in my 40s. The first time I joined Weight Watchers I only had to lose 15 pounds so I was overweight but not obese.

Jackie described the frustration of traditional weight loss methods:

I tried lots of different things to lose weight. Back in 2001 I started with a weight loss group and did medication. And with medication and exercise I lost 70 pounds and I was very excited. And literally, my toe touched the 70 pounds and I was already gaining again and unless I kept things really, really strict I just started gaining again. It seemed like that's always what happened and that's depressing, that's difficult.

This statement from Maya crystallized the frustration of the "Yo-Yo" dieter, "I was always losing the same five pounds, but always going up. Losing five, going up two, you know? And so as I put it initially, in 15 years I lost the same five pounds and ended up a hundred pounds heavier."

Ready for something big.

Other determinants were the consequences or tipping points that resulted in seeking WLS. Many viewed surgery as reserved for people who were even more obese than they, referring to Discovery Channel style programs which feature people who weigh over 500 lbs. and must be lifted out of their homes by crane to go the hospital for surgery. Kelly described a combination of surprise and readiness when her primary care provider first brought up surgery as a solution to her multi-year battle with obesity,

The deciding time was a physical that I went with my GP in February of, what did I say, '08. And it's funny, I had begun to see the commercials for the lap band and I had considered it. And I don't know at that time if I necessarily understood my BMI but I went to him for the physical. And honestly. . . it actually... in fact even talking about it gives me chills to some degree because I had gone into this physical ready to ask about the

surgery. And I'm laying there on the table and we're talking... And again, I used to tease that the doctor would ask me how I was doing, "Well doc, I'm fat and healthy," you know, "How are you doing?" And you know, he kind of chuckled and we joked about it, he goes, "... have you ever considered weight loss surgery?" I was like, "Whoa, wait a minute, why are you asking me?" He goes, "Well, your BMI is 40 plus." I think at the time I was about 42 for BMI. He goes, "You would qualify," and he said, "I've had much success with some of my other patients." He goes, "Are you interested?" (Snaps fingers) That was it; there was no turning back, no looking back, no second guessing or second thoughts, I was on my way and the process began.

The language in the above passages is about surveying the landscape of one's life and how obesity has caused significant medical as well as social obstacles; this passage conveys the movement and the resolve ("That was it; there was no turning back, no looking back, no second guessing or second thoughts, I was on my way and the process began.") to enter the process that will ultimately become a map for their lives.

Many participants did not consider that they were candidates for the surgery nor done any conscious reflection or any research on surgical weight loss. Eddie described being in a state of denial for years about his weight, despite having many physical limitations.

But you know, one of the things that happens with you is people have this resiliency where they just exist, people with one arm and stuff. So I had all these problems but I was existing and really not understanding how much of this was due to this extreme weight. And so I would attribute my huffing and puffing in going up and down the steps to just being out of shape, okay? In actuality, I learned when I went through the diagnostic stuff that I actually was only using 56 percent of my lung capacity because all my organs were just pushing into my lungs and they couldn't expand.

He went on to describe a startling but effective reaction from his medical provider which finally cut through the denial.

The diabetes was just coming up, I was actually pre-diabetic, and they wanted to add medication for that. But I got to, I was taking arthritis

medication and I was taking blood pressure medication. And you know, essentially my doctor just said, “Look...” (When I came in at 335), “There’s nothing I can do for you if you continue to gain weight at the rate you’re gaining.” She said, “So you may as well just write your obituary because I can’t help you, there are not enough pills to give.”

Then when the doctor recommended WLS, his reaction was:

Because the people I knew that did it were huge; I mean they made me look like Skinny Minnie even at 335. She said to me, “Well, I think you should do it.” I said, “Really?” I said, “Why do you think I should do it?” She’s usually pretty conservative. She says, “Well you can’t continue like this and everything else I’ve given you to do isn’t working.” She says, “This is it.”

Similarly, Ruth stated, “My gastroenterologist, when I went to see him in June of 2008 said, “You need to lose weight, you’re going to die. You’re going to die early.” And I went, “Oh no, I have too much to do.”

The, “This is it” revelation also described as, “Ready for something big” precedes the decision to have WLS and is an essential factor in the process of adherence. It is a sort of “ah-ha” moment for the individual when confronted with the reality of how obesity is endangering his or her life, and an awareness that they are ready to do something big to solve the problem. Because most participants understood that conventional methods did not work for them, accepting the referral for WLS was a tipping point experience, the realization that it was a life or death decision which made a profound impact on them.

Judy illustrated a common set of life experiences related to obesity that were increasingly having a negative impact on her life. All participants related limitations or medical co-morbidities that were taking a toll on their lives.

You know, whenever I went somewhere I thought a lot about what impact would this have on my body, will my body impact this? Like are there stairs, will I fit in the chairs, you know, am I going to be huffing and puffing, will I sweat? Or what will I have to wear to this kind of a thing? Will I find clothes that will be comfortable and feel like me? I definitely

feel like I couldn't express myself in the same ways.. My health was not good and that was a significant concern to me. It hadn't been good for a long time.

Having children was part of the equation for many as they surveyed the WLS options. The age of the children at the time of the surveying process was not the main concern, rather the prospect that somewhere down the road the individual's obesity was going to impact their child(ren) in a negative way. Star, who has an adult child, explained,

Yeah, yes, and what was it going to be like for my son, should anything happen to me? Whereas I needed to depend on him totally and I just couldn't let myself go there. That's the one thing that kind of kept flashing before my face; I couldn't allow myself to be totally dependent on my son. That's the way I was. Like I said, I wasn't depressed; I just couldn't let myself get to that lowest level.

Other participants with younger children expressed concern that they would not live to see their children graduate from college or could not participate in common parental experiences like going on school field trips or camping trips. Greta explained another concern for her child,

Even though I had this amazing husband and this amazing child, I didn't want my child to be embarrassed by me, I didn't want to... He looks at me with such adoration, I didn't want that to go away because of one day his friends are going to make fun of him and tease him because he has a fat mom. So many little, little, little things.

Having surveyed the landscape of living as an obese person arriving at the decision to have surgery, participants described two other factors that influenced them in the pre-WLS period: the surgical method and the financial costs of the surgery.

The method defines the process.

Choosing the method of surgery is influenced by a variety of factors, including BMI, co-morbidities, age and degree of invasiveness of the method. As described in Chapter I, surgeries are categorized into two methods: malabsorptive and restrictive using non-laparoscopic (open) and laparoscopic (closed) techniques (Blackburn, 2005; Drake, McAuliffe, Edge, & Lopes, 2006); both methods are considered safe, minimally invasive procedures that are effective treatments for obesity. The laparoscopic adjustable gastric band (LAGB) is the most common restrictive procedure and least invasive of all techniques. A newer restrictive method, the sleeve gastrectomy involves removal of about 85 percent of the stomach with the remaining portion looking like a tube or sleeve. It is also performed laparoscopically but unlike the LAGB which can be removed, the sleeve is nonreversible. The third most common surgery is the laparoscopic roux-en-y gastric bypass (LRYGB) procedure, also the most popular and successful of all WLS methods (Tice, Karliner, Walsh, Petersen & Feldman, 2008). It involves creating a small pouch at the uppermost part of the stomach followed by attaching a Y-shaped section of the small intestine to the pouch enabling food to bypass the lower stomach and the duodenum or the upper section of the small intestine, and to enter the jejunum or the middle section of the small intestine directly (Toth, 2004). The bypassed portion of the stomach is stapled off and divided from the small pouch. A more invasive procedure which may require a 2-3 day hospital post op stay, LRYGB is considered the most successful method currently available, but carries greater post operative complications and restrictions. The malabsorptive component of the LRYGB can cause vitamin deficiencies requiring that patients consume large quantities of

vitamins and other supplements to replace what is lost due to the bypassing of the normal digestive process. It is also a more invasive procedure which carries a greater risk of post-operative complications such as dumping syndrome which results from consuming high carbohydrate foods too quickly causing a generalized malaise, prompting the individual to vomit in order to alleviate the symptoms.

During Surveying, Eddie started out fully intending to have the LGAB but as the evaluation process ensued his doctor encouraged him to consider the VGS.

So it was probably October before I went back there again (laughs). Which is a good thing because by the time I got back there he was now on the course of pushing people towards the sleeve, which he didn't say before. And I'm firmly convinced that if I'd got the lap band, I probably not... I'd only have lost about half the weight. But because the sleeve is so restrictive and there's nothing you can do about it... Once you get it, it's done.

The method of surgery was an important concept in Surveying and the decision to have one method over another was frequently revised after participants discussed all options with their surgeon.

Money defines the process.

The total cost of WLS ranges from \$10,000 to \$35,000 for the pre-surgical work up and immediate post-operative period. Follow up medical appointments cost extra. Participants described going into their first assessment appointment with the WLS surgeon with one method in mind, only to decide on another method after hearing of the options and receiving a recommendation from the surgeon. Maya described how her initial impressions were significantly modified as she began to learn about options.

I was always thinking of doing the band because the other one had always scared me. I didn't know about the sleeve, because it was the band or the bypass. And I found out about the sleeve at the information meeting Dr. . . and I sat in the information... our first meeting with each other and

talked about each one in detail and he recommended the sleeve based on just how much weight I had to lose. But we went on the path of prepping for both, because depending on what insurance... Because I didn't know if the insurance would pay. I knew it would pay for the band, I didn't know if it would pay for the sleeve, so he said, "We can prep for both. We can go on the path we're doing both of them and when insurance proves which one, we can then shift to that one." And insurance did cover the sleeve, so okay, all right.

Maya described a common process which links to the overarching category of The Path: it is individual, perhaps roughly sketched out in the beginning, influenced by the past and ultimately decided by reality such as cost, individual medical needs, and targeted weight loss goal. The cooperative relationship with the surgeon as described above as a consultant at this stage, is addressed below under Navigating and Recalculating.

Luther decided against using health insurance that would have covered much of the cost of the surgery, because he knew he needed a higher level of motivation to be adherent to the post surgical diet.

Well, one of the things that motivated me to stay on track was the fact that I self paid, I didn't go through insurance. And when I tell myself, "Look, I didn't spend all this money to blow it," and that was frequently good enough to keep me on track. And if I felt an urge to get something that I knew I shouldn't have, if I knew I was perhaps over the limit... And sometimes I didn't always tell myself no when I should have, but I could always stop myself and say, "Don't blow it, you spent all this money. Make it count. The insurance wasn't going to cover the sleeve, so I decided that I wanted the sleeve and not the band, so I would self pay. Knowing what I've invested, I don't want to blow it. It was an investment in myself too. So that's one of the first... the only, you know, things that I've done for myself. It's probably the biggest investment in myself short of my college education.

Luther was very aware of his need for self accountability; self awareness remains a key component of success on The Path as will be discussed in Discovery. But

even when insurance paid, significant out of pocket expenses remained. Greta explained,

. . . because there are people who don't have the money to have the surgery. I mean my insurance covered a lot of it but it didn't cover a lot of it (laughs) and that was something we had, that we got some surprise costs out of it that we weren't expecting. The insurance was covering a percentage but it wasn't covering a percentage of everything, which that's what we thought. It covered a certain percentage of this part, but then there's all these other costs that we've gotten bills for that we weren't expecting. And I ask my husband, sometimes I feel guilty about having had it and he says, "No, no, no. Please don't."

The financial aspect of the surgery was both a hardship and incentive to be adherent. Knowing that even with insurance coverage for the procedure there would be more financial costs to bear assisted participants to stay on track, to be motivated to be adherent, because it was "too big " or in this case "too expensive" to fail.

In summary, the stage of Surveying includes reflecting on the past, present and speculating about the future should the obese person not take drastic action or do "something big" to remedy the situation. As information about WLS options and costs were reviewed the individual sketched out a route that formed the basis for The Path. During Surveying the WLS patient plotted a course that was a combination of clearly defined aims and roughly imagined steps ending with a commitment to The Path.

Navigating

The concepts of the surgery and the diet as a tool emerged from the interviews and became the basis for the second stage of The Path: Navigating. The first level coding concepts about the diet were consolidated to include (1) surgery as a tool (2) the diet as a tool (3 the diet is unrealistic, and (4) the diet is expensive. Navigating begins prior to the

surgery with a protocol of a diet of liquids and high protein shakes for about two weeks. This protocol is part of WLS programs to prepare patients for the highly restricted diet after surgery. The pre-surgical liquid diet is also prescribed so that some excess weight such as 10-20 lbs is lost to promote a healthy post surgical status.

The diet is a tool.

Navigating the diet after the surgery was influenced by many factors that would become more important as time passed, but initially provided a structure that assisted WLS patients with adherence. The participants described the diet they received and followed prior to the surgery as a map of what to do in the immediate post-operative period. Luther explained:

I followed the diet very, very strictly for the first year. . . .Because they said the first year, the first 12 to 18 months is when you're going to lose most of your weight and I wanted that to work for me. And thought the best way to do that was to be strict with myself and I got down to like 205 and it wasn't... I didn't really have any hunger issues until last September when my hunger returned.

And referring to the diet as a tool, Luther added, “ Well, I think the fact that my stomach is so much smaller now, I simply can't eat that much, so there is the physical aspect of it. But that's probably the biggest. And I guess the thought of the shame I might feel about myself if I started to blow up again.”

Reinforcing the benefit of having a very structured (eat protein source first, then vegetables, chew thoroughly, liquids last) proscribed diet, Kelly stated, “So I think the fact that these surgeries and the diets that you need to follow are very much about, you know, obviously healthy proteins and some carbs and

vegetables. I think it was very easy for me to follow that diet. And it's funny too, and we may get into it later, but I have never ever struggled with hunger."

Surgery as a tool.

Immediately after the surgery the same diet is followed but the surgery provides a new aspect for meeting the goals of the process. The surgery was often referred to as "a tool" by the participants which gave them structure and challenges in the early days, weeks and then months and years afterward. Sloane described her experience after having the LAGB, "I mean there's only so much damage you can do (laughs), you know? Like even if you say to yourself, "I want to have something really indulgent, I want to treat myself to something," you just can't have the great big, huge, enormous plate of food that you might have been able to do before. So like that's really where it kind of kicks in and helps you."

The concept of surgery as a tool refers to the procedure as a new twist on participants' previous experience with diets and emerged as significant to this stage. Kelly described how having the LAGB provided her with the assistance to stay with the diet after surgery:

You know, again, looking at the band as that tool. You know, I'm using my tool, using my tool, taking advantage. Also you have to understand that as you lose weight, the band will loosen as a result of the weight loss. So I can remember (laughs), actually in the beginning not quite understanding that. It's like whoa, why am I stuck? Why am I on this plateau? And I would see my food intake, it's like whoa, wait a minute, I just ate that entire bowl of salad. What happened? And then again it would kind of click, it's like all right, it's time for a fill, let's take advantage of the tool.

The “fill” mentioned above refers to the saline filled balloon that lines the inside of the band which is attached to a port sutured to the skin. The surgeon can access the port to inject or remove saline into or from the balloon to modify the opening for easier passage of food or greater restriction. This sentiment was echoed by Star who also had LAGB surgery, “The positive side for me with the lap band specifically is that whether I eat good or bad, that band is only going to allow me to eat a certain amount, period. End of story, there is... Even if it stretches a little bit between now and the time I succumb to the Almighty, it’s still only going to hold a certain amount. And knowing that gives me incentive to maintain a healthy lifestyle.”

Those who had the LRYGB experienced the surgery as a tool in a different way than those who opted for the LAGB or VGS because in addition to the restriction of food the method also results in malabsorption; more emphasis is given to not only the high protein/low carbohydrate diet, but consuming numerous vitamins and supplements daily. Additionally, after LRYGB, a common adverse effect is “dumping syndrome”, caused by eating too fast, sugary or high carbohydrate food or not chewing food thoroughly. Dumping syndrome is experienced as a wave of nausea and heaviness that may only be relieved by forcing oneself to vomit (purging) or waiting out the discomfort which can last for several hours. Judy described how she learned as she went along (in this example after experimenting with a bite of strawberry pie) what foods would trigger a dumping episode:

Oh no, my body is just like, uh-uh, nope. I mean fortunately or unfortunately because I was so sick for so long, the signals are really quick and I know them too. So I really, I appreciate that, though, about myself.

My body tells me right away what it needs and I take care of it. And so I go right to the bathroom and I'm fine, I know what to do to get it down. And then fine, and then it lets me know, that was way too sweet. Okay. Even though it's natural sugars and stuff, there's other sugar I'm sure, in there too and that was too much. Because I can eat strawberries just fine. So okay, let's... you know, making a mental note.

The diet is unrealistic.

But despite successfully following the dietary guidelines prior to WLS, many participants stated they could not have imagined how difficult it would be for them to follow the diet after surgery. The main complaint was not that they wanted to eat foods not allowed, but that they had significant difficulty consuming the 50-70grams of protein per day (depending on the method of surgery), and the 64-70 ounces of water required by the surgery team. Additionally patients are required to take vitamins, and in the case of those who have the LRYGB, numerous vitamins several times a day. Catherine explained,

(Laughs) Oh gosh, mama mia. You don't follow them because you can't follow them. They're nonsense, quite honestly. In my opinion, they're nonsense. They tell you to have 70 grams of protein a day. Some days you can't even get in your 70 CCs of water, let alone 70 grams of protein. I mean I'm laughing and almost flushing at the thought of it because the guidelines are very unrealistic and the patient... all patients, I mean in the group I found that many patients share my view. And you end up worrying about it because you think that you're not doing what the team is saying, because they're very adamant about doing it and they go, "There's no room for error." Now 18 months later I doubt if there's ever been a day where I've been close to 70 grams of protein. However, I still have muscles. Now they're not as strong as they should be, I did lose muscle mass. They are right, you should, but I honestly can say I did the best I could with the predicament that I was in or the physical... Not predicament, the physical state I was in. And so the diet was extremely hard to follow.

Eddie added:

That has been a challenge not from the point of view of physically doing it; it's been a challenge because it's so difficult out here to find stuff that will

actually fit what they're talking about. And I know, after doing it for a long time, I really understand why actually people come in a support group and why I see people who have the surgery who continue not to lose weight or don't lose as much. It is hard to find a protein-based diet and there's a great deal of disagreement among the doctors as to what diet you should follow. [The] diet purports to eliminate carbs and does that in a way that most people aren't prepared for. Most people are prepared not to eat sugar, stuff like that. But no fruit, no bread? I still have people arguing with me now that it's okay, this doctor's a quack, he doesn't know what he's talking about, you've got to have a balanced meal, blah, blah, blah. And I said, "My doctor says, "Don't eat fruit," I'm not eating it," (laughs).

The diet is expensive.

A major challenge of navigating the diet is not related to craving high carbohydrate foods, but finding palatable, affordable high protein options in grocery stores and local markets. Sonya explained:

I'm still struggling right now. Yeah, yeah, I'm always in the stores looking at labels to see how many carbs. Because at first they only give you 30 carbs a day and even now it's only 30 carbs a day. So that's kind of really hard. Like this right here, this drink has 29 and that's only one serving of it. There's two in there. So I mean you could be drinking your whole thing away, you know, right then and there. But basically, you know, I'm trying to do it, just I've got to start buying... you know, preparing food to buy and being prepared with it, which most of the time I'm not, you know?

Many participants discussed how they find the best sources of high protein food in online sites associated with WLS support groups or information. Maya experimented with various forms of powdered proteins before finding an acceptable alternative;

It took a while to find one I liked and so that's one of the things I ask when people come in and they're pushing their protein powders and their protein shakes, I go, "What's its base? Is it whey based or soy based?" It's almost always whey based and everybody says, "Why don't you try it with Calorie Countdown or the lactose free milk? And I tried the whey powder with lactose free milk, still didn't help. Too much milk for me. But the powder I've got now is soy and rice and pea protein based, it's a mix. And it has a slightly different texture than whey based, it doesn't mix as easily if you hand blend it, you have to do it in a blender. But it comes in as

many flavors as all the other whey based ones and the syrups mix easily with it and I make nice thick smoothies with it. So there's my milkshake.

Others who enjoyed cooking before surgery take it as a challenge to prepare palatable meals with gourmet flair and that are within the dietary guidelines. Ruth explained:

I can eat salad. The only thing I have that's... I don't... I eat so much of that and then I'm really full. So if I'm going to eat my vegetables, I like asparagus and cauliflower and I like tomatoes and this is the way I get my tomatoes [referring to tomato sauce on a meatball appetizer]. So and then we make... You take low fat cheese and you put it on parchment paper and you make cheese chips and you put it in the microwave until they get a little crispy.

Navigating the extreme dietary restrictions was a learning process for WLS patients. Despite the best preparation, the post-operative landscape was fraught with unanticipated challenges and pitfalls. However, the pre-surgical experiences and deliberations that put them on The Path assisted them to be creative and focused on ways to be adherent. Additionally, the surgery itself, the tool, created a new level of structure because the individual could not eat in the same way as before. Although many participants described feeling frustrated and simply unable to eat the amount of protein and liquid required, they didn't give up. Rather, they rose to the challenge and thought of new methods to be adherent thus navigating around the obstacles to stay on The Path.

Discovering

After several months to one year out of WLS participants became increasingly aware of the changes in themselves, physically, emotionally, and socially. In Discovering participants not only shared the methods and unique efforts they developed to stay adherent to the diet. They also spoke with a mixture of surprise and satisfaction

about the ways they coped during the post-operative period with challenges in their personal, occupational and social relationships as well as discovering new strengths within themselves that helped them remain committed to The Path of dietary adherence. Not all discoveries were positive, especially in the area of social relationships, and the stresses experienced with close friends and relatives were among the greatest threats to staying on The Path. The core concepts incorporated in Discovering are (1) positive relationship with the surgeon/team (2) I want to do it my way (3) coming to terms with change and the same old, same old (4) surgery on the stomach not on the brain (5) interpersonal relationships-the good and the bad,.

Relationship with the surgeon/ team.

In Discovering, the participants started out trying to be adherent and played by the rules. But after a while, some in a few weeks, for others after several months, participants wanted to feel they were in control of the process, not simply following the doctor's orders. This discovery dawned on them with a mixture of inevitability and concern. An important component of this stage was the relationship with the surgeon and the medical team.

Feeling positive about the surgeon was important to most participants. Many shopped around or received recommendations from others who had WLS. If acting on a recommendation, most felt comfortable and confident with the surgeon from the beginning. While some chose a surgeon based on convenience of location and health insurance coverage, others journeyed many miles from home to work with a surgeon who was recommended by a friend, a primary care provider or an online acquaintance. In the early post-operative period this relationship more closely resembled that of a

parent and child, but gradually undergoes some periods of struggle and renegotiation. As the desire to be more in control of the process emerged, the WLS patient felt a mixture of self reliance and independence in relation to the surgeon. Ultimately, the patient desired a more collaborative relationship and the study participants described succeeding in this effort.

Meryl described checking in with the surgeon when she found herself slipping off course, “. . . and when I find that I’m having trouble getting control if I’ve done what I shouldn’t and take more than a bit of white carbs, I will call and check in with my surgeon’s office and make sure that they don’t have a problem with it based on my latest blood work. But I’ll go back onto the pre-op diet and go onto the protein phase for five to 14 days to go through... you know, purge my body.”

Kelly chose a surgeon a far distance from her, approximately 30 miles, and liked the way the diet and post surgery guidelines were presented and reinforced after surgery,

It is not about you know, don’t do this, don’t do that, don’t do this, don’t do that. I mean certainly there are limitations to the surgery; you know, it’s a good idea not to do this... But as I just sit here thinking about it, it was just always in a positive note. “Make sure you do this and you’ll be successful. Do this and you’ll be successful. Call us if you have trouble, go to this website. Come to the doctor, go to the support meetings.” In my mind it’s always been a very positive and I think that’s what’s been helpful for me.

Similarly, Jackie found it helpful to discuss issues with the surgeon in post-op visits when she felt she was spinning her wheels:

I just love the fact that he’s so passionate. I mean I’m very passionate about what I do and I like it when I see somebody who’s like, he’s really into it and he really gets it and when you ask a different question he comes right back with what the research says and he’s very excited about it. Which makes me more excited about it. But I said to him, “You know, my

metabolism, I don't know why I don't lose weight," and he just looked at me and he said, 'Okay, think about this for a second, you're a smart girl. Calories in, calories out.' And you know what, it is. It is as simple as that. As hard as that, but as simple as that.

In the immediate post-operative period patients considered the surgeon the ultimate authority and looked for guidance and approval. As time passed, some participants admitted not reporting episodes of veering off the diet while others, such as Catherine, admitted she was not fully adherent although not cheating with forbidden food.

I still don't take the full complement. I mean its hit and miss. I would say I'm 80 percent there; I wouldn't say I'm 100 percent there. So it's very difficult following the guidelines, it's very, very difficult following... And also dealing with the guilt or the worry when you don't follow them. Yes, you must do this, it's written in black, huge letters. The font is size 18 on the page. You must do this, do not go to... I mean it's more emphatic than anything else I've ever seen. And when you meet with the hospital personnel as well, it's very, very driven that you should follow the diet. And sometimes it's... Now when you tell them, if you're honest with them afterwards... I was honest and I said, "I'm not following the diet, I'm not following the vitamin regimen and the calcium," they're very kind. It's not as if they give you a hard time or anything, and they're very understanding. But the patient has got to then go through that worry period.

Veering off the diet, not simply with foods not allowed on the diet, but eating less than the prescribed amount, was a liberating experience. Keeping the occasional or overt cheats from the surgeon gave way to greater honesty and requests for guidance about how to deal with the problem, if the plateaus were long or weight was regained. After several months the relationship with the surgeon and the team transitioned to a more collaborative one. Star described having to correct the surgeon who routinely suggested tightening the saline filled balloon of the LAGB to keep it from loosening, despite telling him it was not helpful:

Yeah. He didn't put that much in each time but he... The one time, because I was hungry but I hadn't figured out the protein part. He filled it

too much because I was constantly going into a zone where I was eating too much. Because I had to keep a diary, he wanted... And that was starting out with my second year because this September will be three years. And as I remember, he wanted to fill it to whatever the capacity was, but then I couldn't eat anything because everything I ate, nothing would go down, nothing. I don't care what it was. And I was just miserable. I really didn't lose any weight; I think my body went into the fat storage thing, that kind of thing. So within three months he had to take it out, take some of the fluid out.

Sometimes, as in the case of Abbie, the relationship with the surgeon was complicated because she didn't lose weight after the surgery. Wanting to be a "good patient" she followed medical advice to tighten the LAGB, but to no avail.

Well, I mean I was doing that and keep going back and going back and then realized okay, we'll put more fluid in, fluid in, fluid in it. And he said that I'm like the most... patient that has the most fluid of all of his patients in their band. And for me to still have not lost weight, you know? And so it's just like... I haven't been back now probably in about six months because it just got frustrating for me because it was like you know, I keep going back and I keep getting the fills and it was painful and for what? You know, and so it's just like... It's just frustrating.

Abbie became disillusioned with the surgeon, the surgery and disappointed with herself, yet did not seek a second opinion. However, like all the other participants, she took matters in her own hands when it came to food choices, deciding she would do as much as she could to keep from gaining weight. "Yeah, it's just like... Yeah, I think that that's what was making it hard, is that it didn't happen, you know? What I signed up for didn't happen and nobody can really say why. And I don't know what to do (laughs), you know? I did my part I feel like, you know? So now it's just about me, again, just with the food choices, I guess."

I want to do it my way.

Most participants, after several months or over 1 year, came to realize they had exercised more control over their dietary choices, or “I want to do it my way”. They described an approach of following the diet, particularly the high protein shakes as a daily breakfast, but occasionally veering off the diet during lunch or dinner. Most learned that with an eye on portion size, they could have an occasional cheat or indulgence and not undo the success of the surgery. Judy explained,

That’s tough. I guess I’m not saying no to them. I guess I’m kind of saying, I’m going to have an integrated, diverse life where chocolate will be part of my life but it won’t be a part of it the way it used to be. You know, I will have five Hershey kisses instead of five pieces of cake, and that’s the difference. And that works for me and it makes me feel like I’m having chocolate and it’s great and it’s fun and it makes me feel like I’m a regular person. Which is really what I wanted. So I think just like the quantities and the consumption of it all is way different.

Discovering feeling more like a “regular person” was liberating in the post-WLS period. Participants described achieving a new normal or capacity for indulgence without reverting to past patterns of “yo-yo” dieting. Sloane explained, “I mean it’s like if I have breakfast and lunch covered, I can feel pretty confident that when I get home at the end of my work day I’ve only had like 600 or 700 calories. And that way even if I want to have a pretty big dinner, I can because I’ve done a good job of controlling things up until that point.”

Coming to terms with the changes and the same old, same old.

A significant aspect of Discovery is coming to terms with the positive changes in their lives, about how much healthier they felt despite the difficulties involved in dietary

adherence. Many participants commented about the pleasure they experienced shopping for clothes or catching themselves in the mirror. Kelly explained,

You know, and when I walk by the mirror or I'm standing at the 10s and the 12s instead of the 20s and the 22s that is definitely a mindset. When you are successful... I'm sure there must be... When you're successful, it's easy to be successful. You know, I'm sure there must be some sort of proverbial saying (laughs). So and, I mean there are certainly health issues and that's better. And I mean in my mind I know the conversations about dieting and obesity and addictions but to me, it's certainly, it's a situation I don't want to go back to either. And I do sort of think of it as an addiction or an issue. I've had trouble in my life and now I've conquered that and I don't want to go back. So that's a good deal of motivation.

Maya described having to monitor clothes purchases because her size changed every few weeks,

I like going to stores now, I no longer have to shop on catalogues. Now I'm at size 22 from a 38. That's the difficult part, because you're losing so fast. I was a 24 at Christmas and you bought... And I'm now, two months later, almost two and a half months later I'm now a 22, 24s are now too big or getting too big. When I was at the higher ends it was, I'm wearing them until I can grab a full handful on the pants and just pull straight out. And that took me four sizes each time, so that worked. And now that I'm at the lower end, I have two pair that I can fit into, two pair that are slightly bigger and two pair that I'm aiming for (laughs).

Luther shared what was an emotional discovery about purchasing clothes,

Oh yeah, oh yeah. I had an emotional experience when I went and bought jeans one time. I had always, always had to wear relaxed cut jeans and when I was about half way, I tried on a pair of 40s and they were too big, so I went and tried on the 38s. And the waist was fine but the legs looked baggy and I tried on the straight legged jeans and I'm going, I can wear straight legged jeans. I almost cried, I almost cried.

Being able to wear a bathing suit and enjoy the beach, purchasing clothing in a department store rather than a catalogue were not only pleasant changes, but concrete indicators of how the participants had changed after the surgery. It was a

discovery about the magnitude of the success of the surgery and their commitment to success with the dietary guidelines. Several participants described the joy of feeling comfortable walking onto an airplane or going somewhere and not having to worry about fitting into chairs or about the ambient temperature. Eddie explained,

I had to have the fat man belt for the airplane, I had to sit and wait for the stewardess, flight attendant to get their attention, when I got their attention they had to give me the belt. The day I got on a plane and I just sat down in the chair, said, “Ah,” and then I just took the thing and just snap. So... and that’s nice. It’s that kind of stuff. That I can bend over and tie my shoes. I was wearing shoes that I could slip on because I couldn’t tie them. You know, walking the dog without passing out or feeling like you’re going to.

A consistent finding was the improvement in health status with all participants reporting changes particularly in co-morbidities. Eddie summed up the magnitude of the health improvements after WLS:

All of the diseases that I had are gone, that’s a major thing for me. Getting your life back under control and not having... You know, I went from the year before my doctor telling me, “Get out of my office, you’re going to die,” to the next year I just went to her in November, her saying, “You’re in the best shape of any 60-year-old patient I have.” I said, “What?” (laughs) She says, “Yeah.” I said, “You pronounced me dead last year,” (laughs). I was building my coffin.

Ruth listed the improvements in her health, “I got rid of, initially, my insulin and my oral medicine. But since I’m on the aromatase inhibitor, I’m back on oral medicine but no insulin. I was on four blood pressure medicines, I’m on two. No cholesterol medicine. I feel good; I have a lot of... I’m high energy; I have a lot of energy. I feel pretty good.”

Surgery on the stomach not on the brain.

Another aspect of Discovery occurred within several months post-operative when the individual recognized that they were having success with weight loss, but continued to be plagued by problems, usually not weight related. While they felt positive about the success, they realized they were the same person intellectually and emotionally. They described becoming aware that despite the positive changes in their weight and health, they were still the same person.

This is summed up by the concept “surgery on the stomach not on the brain”.

John admitted to this struggle,

But as far as following the dietary guidelines, it's been somewhat of a struggle to stay within those. Yeah, staying under the carbohydrates is very difficult because I like bread and there's a lot of carbohydrates in that. And sugar wise has been difficult because I find that what calms my stomach nowadays is a Slurpee and it's very difficult to find a sugar free Slurpee. So carbohydrates and sugar would be the main things. No, I do not avoid the bread and the other carbohydrates. Yes, and there's a reason for that. Because if I stay away from them I'll get terribly depressed and easily so frustrated. And if I put a massive amount of carbohydrates into my system, I feel much, much better. Although I feel worse after a few hours.

John regained some weight, about 20 pounds, when he reverted to eating as a form of emotional coping. His surgeon recommended he seek therapy to help him develop more effective coping strategies. Similarly, Sonya found it difficult to manage boredom and reverted to some eating patterns long established before surgery, “ I'm still struggling right now. I am seeing the therapist they have there, because of anxiety and they recommended... I'm on anxiety medicine at the moment to try... Because I mindlessly eat. I could sit in front of the TV and eat a box of candy. Around Thanksgiving I ate four boxes of candy (laughs).”

Others spoke about resuming socializing with friends and consuming alcohol as they had before the surgery. Alcoholic beverages are restricted by the diet after surgery because of the high carbohydrate content. Yet many had become more comfortable eating out with friends, but tempted to resume drinking as part of those occasions.

Sloane explained:

I would say the things that probably tempt me the most are alcohol and my husband and a lot of our friends are musicians, and so they perform in bars. So a lot of our weekends involve going to bars to see my friends play and it's just really hard to not have drinks (laughs). So I mean when you see the days when my calories jump above 2,200 or something like that, those are the days where there was drinking involved usually.

She went on to describe how she learned to manage those calorie jumps, “ I try to just get back to the diet. If there's one day that there's a spike, I don't necessarily try to eat lower the next day but just get back to where I should be as soon as I can.”

John described pre-surgical drinking and resumption of alcohol abuse after surgery as a challenge to adherence because it also increased his caloric consumption which made him at risk for relapse of the depression; he reported depression as a pre-surgical co-morbidity. “Oh, yeah. I started abusing alcohol at the time. In fact, yeah, I started abusing alcohol to treat the depression. I mentioned that to the weight loss doctor that follows me and she sent me to a shrink, a psychologist. And he quickly showed me how to extinguish the desire for alcohol. But when I started abusing the alcohol was when I kind of lost control of the eating.”

“Surgery on the stomach not on the brain” was an unwelcome awareness for participants but also presented new opportunities to develop new coping strategies.

Greta revealed a common experience,

You know, it's funny. In some ways it's been hard twofold. It's been hard because I find it very hard to get in everything that I'm supposed to get in and it's been hard because it's taken away my coping mechanism, which is to eat. And when I say eat, I mean if I was upset, I would go to the store and I would eat an entire container of ice cream plus chips and dip, plus all the thing... You know, just so it's brought... my emotions are much more on the surface. Good and bad, you know what I mean? So and yet... And I haven't been perfect. I can honestly say I've not been perfect. I think had I been perfect, I'd probably be further along. Even though I've lost over a hundred pounds, I would be much further along in my process. But like I said, it's kind of funny to me that I'm like, I can't... It's like I have a hard time getting in all the calories and all the protein that I'm supposed to get in, you know, without resorting to the wrong ones (laughs). But it's also been hard because many, many, many times the stress in my life has not gone away

Judy explained further,

I don't think surgery addresses the core issue because I think surgery, is they tell you, "We operate on your stomach, not your brain, and you've got to do the rewiring of the brain." I definitely have done quite a bit of therapy throughout my life as far as being depressed... And around this time that I made this decision I hooked up with a therapist here who was phenomenal and had a lot of experience with binge eating disorder and women's issues and eating and was really unafraid to go there. And it was perfect because she couldn't do the physical part, but she could do the mental part. And so we kind of started that journey together before the surgery about what is this kind of addiction? Because there's going to be this physical blockade but you still need to deal with what's in your head. So I feel like I was pretty much addressing it on a daily basis, it really took over my life for a long time before, during and after the surgery.

The challenges of emotional eating and using food to cope with stress continued after WLS. The participants were neither naïve about this nor the need to address it immediately to prevent past ineffective coping patterns to return. But the surgery itself, the tool, provided a new level of support and motivation to tackle the "brain rewiring" issues and assisted in greater depth of understanding the connection between the emotions and the dysfunctional eating.

Interpersonal relationships-the good, the bad.

A final component of Discovery was the role of interpersonal relationships-the good and the bad. Many participants chose not to inform even their closest friends or family about their decision to have surgery. Pre-surgical weight issues and conflicted interpersonal relationships were commonly reported as ongoing problems after the surgery. However, other relationships, surprisingly for most, improved and became important to post WLS coping.

Meryl discussed the reigniting of interpersonal conflicts after her WLS despite the fact that she had not told anyone but her husband about the decision.

People who are jealous of me, people who are sure I had weight loss surgery, that I won't reveal it to and try to trick me into saying it. That's the only negative. The jealousy can be... It surprised me how many people. It's petty people. One of them is my sister, maybe even both. I know my older sister has reacted very badly, my younger sister I'm not sure. Although my older sister is excited for me, I don't think she's come to terms with her jealousy but it shows in the way she treats me.

Most interviewed decided to inform a select few people who they trusted-friends, family or colleagues-and knew would support them no matter what. But dealing with interpersonal stressors continued to be a trigger to eating as a form of coping with anger and depression. Greta explained, "I have a very complicated, difficult relationship with my sister and there have been times where she has been very cruel and it has hurt me to my core. Like that song it's like, 'I just want the pain to stop', so I will eat something I shouldn't because in the past it's what... Well, I've found it doesn't work anymore anyway."

Most participants chose not to inform extended family members or those in their social network because they did not want to feel pressure to be successful or face

inquiries as to how the surgery was working. Many reluctantly told spouses, children or supervisors because it would be obvious to them that they were eating differently, losing weight rapidly, and needing to miss work for follow-up appointments. The positives of social support outweighed the negatives for most. To be supportive many spouses, siblings or roommates offered to go on the same or a similar diet. Those with younger children, in particular, had to continue to prepare regular food for them, but felt disinclined to veer off the diet; they reported feeling empowered to be adherent as loved ones offered compliments about their success. They discovered that they became role models for younger children or a credible resource for friends who also struggled with weight.

Participants reported that they benefitted from the support groups formed by the WLS surgeons' offices. Many attributed these meetings to helping them develop new coping strategies. But the most common benefit of support groups was being able to be totally honest with others about the successes and challenges without feeling judged. The groups spawned new friendships that extended outside the group. Members met at local restaurants before their weekly meetings for dinner to practice ordering from menus and experience camaraderie. Ruth described a monthly get-together with other females from her support group where they experiment with recipes and enjoy each others' company. She described being out with the group and running into another acquaintance who inquired as to how she met her friends. "We met in swimming class", she replied. This served as a new metaphor of The Path-relationships formed through the WLS support groups were private and based on a shared experience of learning new forms of coping with the obstacles encountered on the journey. When asked what was helpful to stay with

the diet, Marilyn summed up the benefits of support group, “It keeps me honest. I know I’ve got to see these people every week, you know, and that really helps, knowing that they’re there. Plus, if I get depressed or if they get depressed, then like I said, the group that we get together with, we call each other and just talk.”

Some reported not attending support groups although it is highly recommended by WLS programs. They gave a variety of reasons, but one commonly expressed was that they did not want to feel uncomfortable observing the success of others if they were not achieving their weight loss goals. Abbie preferred logging on to online chat groups or checking discussion boards from WLS websites such as Obesity Help.org. When asked about attending support group she stated;

No, never been. Just online support groups. Different groups like band communities and stuff that are on the web and that kind of thing. I’ve never been to one of the support groups at the hospital. I’m embarrassed, Sylvia, you know? I went and I did all this and then I don’t want to see all the other people and it’s like kudos for you, great job. I did the same thing and it’s nothing.

Some returned to support group upon the recommendation of their surgeon when they reached a plateau or were reporting weight gain during two or more consecutive office follow up appointments.

Discovery was about developing more self reliance and control over the WLS diet, being more of a collaborator with the surgery team rather than a dependent follower, coming to terms with the changes in health, body image and self image, appreciating new supportive relationships, reinforcing supportive loving relationships, and establishing bonds with other WLS patients to keep each other on track by sharing ideas of what worked and what didn’t. Discovery also involved confronting old demons of eating as a form of coping with stress, old patterns of thinking and feeling, and being abandoned by

and angry with loved ones who felt threatened when the patient loses weight or judgmental when the surgery is unsuccessful. Discovery was a time of reflection that provided essential information to enter the next stage of The Path: Recalculating.

Recalculating

In the stage Recalculating the WLS patient, having acquired a significant level of success after the surgery through months or years of adherence to the dietary guidelines, reflected on the changes and the lessons learned to this point. This stage generally began after 9 months to one year post surgery when certain specific physiological and psychosocial processes converged. The first and most important was that the appetite, which had been significantly curtailed in the first months, returned and triggered food cravings that put the individual at risk to regain weight. With this expected but unwanted occurrence, WLS patients recommitted to the original diet while trying out new strategies to weather bouts of hunger and eating as a form of coping. The concepts of this stage are (1) embracing the new body (2) the appetite returns (3) new ways of socializing (4) cheating but cheating differently than with other diets (5) reengaging with professional support (6) be prepared and (7) the role of exercise.

Embracing the new body.

Embracing the new body was the experience of self acknowledgment and being acknowledged by others for the significant physical changes they achieved through the surgery and dietary adherence. Participants expressed satisfaction with their appearance, health, new levels of physical endurance and improved social functioning. Maya explained, “I’ve lost 147 pounds, I’m exercising more, I’m charging up the hills. When I started before I could barely get up the hill from my office to the metro in maybe 10

minutes, 12 minutes. Now I can get up there under five. So... I feel generally better. My family tells me I smile all the time.”

Many described not only feeling better but liking their new body. As discussed in Discovery, participants were embracing their new body image by wearing clothing they never thought they would fit into. Rather than hiding their bodies under loose fitting outfits, many described feeling inclined to wear fitted clothes and even showing a little skin. Marilyn explained, “Nice clothes, I look at myself in the mirror because I got some of the shell tops because I’m always too warm. And I got some of those and you know, the tapered cut—I look at myself, going, I look pretty good (laughs). I’ve got curves again.”

The appetite returns.

Yet, as they bask in the satisfaction of the new body, the phenomenon they were warned about, the appetite returns, occurs. Many experienced appetite and cravings as night time hunger. They described being able to stay focused and adherent to the diet during the day because they were busy at work or focused on caring for young children. But as the daytime structure gave way to a more relaxed pace in the evening, many experienced hunger pangs. Sweet foods were craved and they found themselves grazing around for something to satisfy their sweet tooth. But knowing the dangers of succumbing, many described efforts to combat hunger by using the dietary guidelines to develop creative strategies to satisfy the cravings. Luther explained, “Well, I still followed the diet but I would allow myself more things that I can eat. I have these low fat cheese sticks and I have these other low fat, low carb treats that I can have. I would just have a few extra.”

Counting calories was also an effective strategy to manage cravings. Many accomplished this by keeping a food journal which served as a concrete record of what had been consumed and allowed them to consider how many additional calories they consume without going way over the limit. Portion size, which is a basic guideline learned from previous diets, was also helpful because it allowed many to take small bites of cake or a cookie at a party or special event, while not slipping off the diet. Maya explained how she survived the first holiday season after WLS while being exposed to desserts and other restricted food items,

Well, Christmas was probably the hardest, in that everybody's making... We went to family so everybody was making food and there were all these sweets around and of course you have the pasta and the potatoes and the cornbread and the stuffing that was there and the pies and things for desert. But I had my little desert plate with my dinner plate, you know, and I filled up my turkey and my little vegetable and then I put that much stuffing, that much potato on there just so I could get the taste and I ate the turkey first and then I ate the veggies and then I got to that. So actually, by the time I got to that, I usually didn't want it.

New ways of socializing.

To stay on track but reintegrate into their normal social activities, many WLS patients described techniques learned in support group as described by the concept “new ways of socializing”. Eating out socially presented challenges when companions either did not know the individual had surgery, or were not on any restrictive diets themselves. Participants found new strategies to enjoy social dining without veering off the diet such as ordering an appetizer, from the children’s menu or a half order of an entrée. Many described ordering steak, fish or chicken from a menu, cutting the entrée in half and asking the server to wrap it immediately to get it off the table so as not to be tempted to overeat. Declining bread or pushing it to the far end of the table was another technique.

Fast food restaurants that offer mainly deep fried entrees or other restaurants that typically serve food with heavy sauces were a challenge, but were navigated. Ruth explained,

Well, and I have this one friend, he and I would have lunch together every day. And so when I was on the liquid part of it, we'd go to a Chinese restaurant, he'd order lunch with Won Ton soup, I'd take the won tons out and drink the broth and we worked around it. So there's ways to work around it. But on special occasions I will allow myself some desert or some chocolate—like my birthday or my parents' birthday.

In Recalculating WLS patients learned what they could and could not expect in terms of support from others who were not in their situation. However, many found friends and relatives to be remarkably flexible about socializing in new ways.

Since most participants admitted that since overeating, lack of exercise, and mindless or emotional eating contributed to becoming morbidly obese, they needed to learn new ways to be with others and to be by themselves. Many found new outlets through the support group. As members became more comfortable and supportive of each other, they began to socialize outside the group such as meeting for a meal before group, signing up for a 2 or 5K charity walk or run, and visiting in each other's homes. With their pre-surgery social networks, they also found new ways to be together without being vulnerable to eating triggers. Judy described becoming a sort of social director for her friends by devising new activities to do rather than eating out.

And that's what you do, is you hang out and you share stories over meals. Well, I couldn't really go out to eat because I couldn't eat. Food is so huge in this culture, you know, it's so huge. And it was hard but it was good to also realize... It pulled my friends out of not just doing food based things. Let's do something else. Like and I sort of joined a book club and joined a movie club ... I switched gyms so I could go to a gym that more of my friends went to, so we could meet for gym dates. And just yeah, more of stuff like that or wanting to get to know different places to hike around

here. So I'd say like, "All right, get your dog..." because I don't have a dog, so all my friends do, "...and let's go hike."

Cheating but cheating differently than before surgery.

In Recalculating participants accepted that they could cheat from time to time, as captured by the concept of "cheating but cheating differently" than with other diets. Most admitted to eating desserts for special occasions. Some even purchased sweets and used them as a reward for continuing to be adherent and losing or maintaining weight goals. Food journals, smart phone applications, and online WLS websites also provided beneficial information about how to manage cravings, indulgences and stay on track. If they veered off the diet, they needed to get back on track immediately, but avoid self punishment. Marilyn described episodes of cheating and how she dealt with her emotions, "Oh, I beat myself up, you know? And then I just tell myself to stop it and get on with life, you know? And I've got to get right back on track. And I know that some of the people in our support group go, well... they think well, I blew it so for the rest of the day I'll just blow it because I've already blown it. But I don't do that."

Another factor in cheating or veering off track is the tool, or nature of the surgery. In Recalculating, the revision of the stomach with a much smaller volume and tolerance for high carbohydrate foods was an immediate reminder to proceed with caution. Star described the risks of overeating and the assist provided by the surgery,

Well, you want the calories; your body's craving the calories. But the good thing about the lap band, even though I want the calories in the form, like say potato chips, I only wanted one brand of potato chips, which was Utz, regular potato chips (laughs). I didn't want the barbecue potato chips, I didn't want the salt... garlic and vinegar, I wanted the plain potato chips. And to control my need for them, I would have the smaller bags as opposed to

buying a big bag and eating the whole bag. As long as I got enough in. But as soon as my stomach filled up to the top, that was it.

Reengaging with professional support.

Another concept in Recalculating involved “reengaging with professional support” to keep on track. Participants realized that they had more control over their diet than they imagined at the beginning of the Path, while accepting that they could not proceed without the dietary guidelines and be successful. This led to a redefining of the relationship with the professionals on the surgery team; the relationship was more collaborative in this stage. Meryl explained, “Yes, and when I find that I’m having trouble getting control if I’ve done what I shouldn’t and take more than a bit of white carbs, I will call and check in with my surgeon’s office and make sure that they don’t have a problem with it based on my latest blood work. But I’ll go back onto the pre-op diet and go onto the protein phase for five to 14 days to go through... you know, purge my body.”

In Recalculating the boundaries were loosened, participants reengaged in life, with their social networks, and previous social activities. But doing so created new risks and hazards to staying on The Path. This was the stage in which what they had learned from the previous stages, what worked and what didn’t work, were taken into consideration in recalculating their path.

Be prepared.

Participants recommitted to the dietary guidelines in this stage to help weather the storms of cravings, boredom, and emotional triggers to eating. A major component of this stage was the concept of “be prepared”. In Navigating participants tended to follow

the diet very closely and also to establish tight boundaries of when, where and how to eat. Participants emphasized the importance of having adequate protein sources available every day. In Recalculating, they knew where to buy the protein powders they liked, and how much they needed to consume to achieve the required daily allotment of calories, protein and carbohydrates. They not only kept these protein sources at home, but at work, in their cars, and in purses or brief cases. Purchasing the vitamin and other nutritional supplements was also important as was setting up a system of alarms, reminders, and checklists to assist them consume these diet essentials daily. Some used the calendar function on their home or work computers or smart phones to set alarms and reminders when it was time to take their vitamins. They filled weekly pill packs with supplements in addition to other scheduled medications and brought them to work or tucked in their purses so they would not miss a dose. They emphasized that having the protein and supplements on hand prepared them for the spontaneous mid day birthday party or impromptu after work happy hour. Sonya explained the hazards of not being organized with her protein supply or meal planning and finding herself in a grocery store without a shopping list,

Or going to the grocery store and only buying what I need to buy, stay away from... Because the other day I think I was leaving the store and what's sitting right in front of me were two for six bucks, they were the Reese's Pieces in the bag, and of course I buy them and go home and sit there and shovel it in, you know? Self control problems despite knowing better. And so basically I just need to say, "No, you can't have it," and walk out. You know, only buy what... I think it's only buying what's on the list that I can buy, you know?

Sonya continued to work on her preparation mindful of the temptations that lurk around every corner in a conventional grocery store. Even with meticulous preparation

the schedule of eating and taking supplements can be extremely difficult. Catherine used a combination of planning, technology and determination to follow her diet and supplement schedule but acknowledged the difficulty in following the regimen day after day,

I have a bag and I have my little thing full of what I have there, okay, and this is what I empty out every morning. I put these on here, every morning I come into work, these are what I take. And I put one out of each one of these, however many I've got to do a day, and then I have a beeper and it beeps off. And you can see on the top (noise) beeps off. And I've got it programmed in here and I carry a beeper on my thing and I beep and I take whatever I have to take in here for this, okay? And I put my little things away. So this is quite burdensome.

The role of exercise.

The next concept, “the role of exercise”, was a strategy to control appetite and make up for periodic dietary indiscretions. However, it also served to reinforce the success of adherence as participants described being able to work out for longer periods of time, with greater intensity and sense of accomplishment. As with the diet and supplement regimen, exercise routines became part of their lives as never before. Participants joined gyms, attended exercise classes, started running, prepared for 2K-10K races and half marathons. Most never imagined they were capable of feats demanding physical endurance. Star described the physical, emotional and social benefit derived from her exercise routine,

I have a commitment to myself to exercise, which at first I didn't do. I bought all the machines but never did anything, you know? Yeah, yeah, yeah, you name it I had it, the rowing machine, I had the bicycle, I had the elliptical machine... Didn't touch a thing. But when I go to Curves, it's one of those things whereas I go in, I do a little... you know, when you communicate with your mates, nobody is Jane Fonda looking, we're all in the same boat. Nobody's critical and we can laugh and talk and carry on

and talk about wholesome stuff as opposed to, well how much did you eat today? They're not in a competitive... They just want to keep moving and that's what I like, you know?

Exercise was also a way to make up for veering off course. Sloane used exercise to counter episodes of complacency or consciously going off the diet,

Well, it's funny because I kept going back for my appointments with [the nurse at the surgical center] and he would see that I hadn't lost any weight. And he would say, "What are we going to do to get you back on track?" And I would say to him, "Oh, I'm going to put more effort into it," but I knew all along I would put effort into it starting January. It's like I knew that I was sort of giving myself this permission to slack off and that I knew that there would be a date when I would get back on track. And I actually had been sort of getting motivated to get back in the game a little sooner because I signed up for a 5K race. Like I signed up in December for this race and I was going to be running the race in mid-February. So I knew that like I'd get back into exercising. So that sort of helped me get back on track as well.

John found emotional as well as physical benefits from doing yard work that would have been impossible for him to do before surgery, "... physically where I live, it's a big lawn. I used to be able to go just from one end to the other and then I'd have to rest against a tree for a little while and then go back and sit down. And it would take easy six to eight hours to cut the lawn. And now I'm able to go through the entire lawn in an hour and a half to two hours without stopping."

Recalculating was a stage in which participants encountered new challenges, old demons, and disillusionment about the impact of the surgery. Realizing that they had regained an appetite and were craving restricted food or wanting larger portions forced them to accept that continued success was in their hands. And in coming to this realization they regained momentum to stay on the path and find creative resolutions to the problems of adherence through embracing the changes and improvements in their

bodies, finding new ways to engage with their social network, careful cheating, reestablishing contact with and using the relationship with the surgery team as a collaborator, being prepared for the return of the appetite, cravings and emotional triggers to eating, and establishing an exercise routine through which they discovered new talents and motivation to stay on The Path. Having traveled this far for many months or years, participants were challenged to keep themselves motivated to keep going by entering the next stage-Persevering.

Persevering

In Persevering participants look back at the path created thus far, review the stages to keep themselves on track and look ahead to obstacles and opportunities which lie ahead. The concepts of this stage are (1) no going back (2) not as easy way out (3) it's a marathon not a sprint, and (4) know what you're getting into.

No going back.

After achieving astounding changes in weight, with significant improvement in co- morbidities and quality of life, participants declared a commitment to keep themselves on track in a variety of ways so that there was no going back to the pre-surgical weight with the attendant illnesses and problems. Kelly described how important it was to her that she accomplished significant weight reduction through the surgery and how the improvements in her life were reinforcements to keep on the path, "And I mean in my mind I know the conversations about dieting and obesity and addictions but to me, it's certainly, it's a situation I don't want to go back to either. And I do sort of think of it as an addiction or an issue. I've had trouble in my life and now I've conquered that and I don't want to go back. So that's a good deal of motivation."

Maya and others used specific strategies to help her not go back to the pre- WLS weight, for example keeping “before photos” on refrigerator doors or on their smart phones so if they ever got the urge to over indulge, they were reminded of how far they had come.

Looking at my picture. I pull up my picture and I look at it and go, “This was me, I don’t want to be this again.” That was me. That was me last April. In the support group last week I pulled out the belt I was wearing in that picture and then I put it in the hole that I was wearing in that picture and I went like this and I went wiggle, wiggle, wiggle and it went all the way down. That was me. And that’s how I... I don’t want to do that anymore. Plus, I got rid of all my clothes, all my fat clothes are gone (laughs). Everybody says, “Oh, you should have kept a pair.” No! Get rid of your fat clothes.

No going back also was reinforced by the desire to be healthy and not have family members, particularly children, be burdened either to take care of their parent, who suffered serious medical problems related to obesity, or by the parent’s appearance which might be a source of ridicule from peers. Star explained,

Because I was using the wheelchair for about five years. That’s embarrassing to me. I’m not that old, I should be able to maneuver my body. We went to an all inclusive my second year, down in Mexico. I had never been to Mexico. And I really had stopped traveling because I was so big, you know? You take pictures with your girlfriends and I’m looking like a whale and they are looking like you, you know? I’m sitting around like... So my motivation is as long as I can keep moving and I don’t have to have anybody to wait on me, I don’t want to be a burden to anyone. I want to be able to get up and switch away. I said, just remember what you saw and I’ll be happy (laughs). That’s my motivation, yeah. It’s my health. My health is my big motivation, yeah.

Whereas Greta was determined to not go back because she wanted to not only live a long and healthy life in order to enjoy seeing her son grow up but also to improve the financial and physical health of her family,

(Laughs) Corny as it sounds, I look at my son every day and I look at myself reflected in him and in my husband, and that is probably one of the best things I can do for myself. And the other one is I finally believe that it's okay for me to be selfish and that it's okay to... by being selfish and by taking care of me, I'm taking care of them and that it was more selfish to give in, because I wasn't 100 percent. The more 100 percent I can be for me, the more I have to give to them. That's the primary thing and the other thing is, like I said, I just get up every day and say, "It's a fresh start," instead of feeling defeated from the minute I wake up, which is what I used to do. If I did one thing wrong, the whole day was shot. Now if I do one thing wrong, I did one thing wrong (laughs). I forgive myself, I guess.

Not an easy way out.

In the stage of Persevering participants complained that they continue to experience stigma not only related to being obese but also for having had surgery. A common misconception of many in their social support network was that surgery was cheating or taking the easy way out. This opinion was reinforced not only by friends and family who were not informed about the challenge of having WLS to accomplish significant weight loss but in the mainstream media in particular.

Sloane explained,

I don't have any regrets about it and for me I think it really was a good choice. I feel like there are a lot of misconceptions about weight loss surgery and I have had the occasional experience of telling somebody about it and it being very obvious that they really didn't know anything about it. They didn't know why it's something anybody would choose to do, or people seem to think it's cheating or they seem to think that it's putting a physical band aid on something that's an emotional problem. You know? I mean people are saying... There's all kinds of misconceptions out there and I... Like I watched The Biggest Loser, everybody who's ever had a weight problem probably watches The Biggest Loser, and they're very down on surgery on that show. You know, they're always applauding the people that are doing their program and having success because they did it without surgery. Like surgery is some sort of like lesser option or cheating option or something. And that is, I think, unfortunate, because I think there are a lot of reasons why it ended up being exactly the right thing for me to

do. And it is not exactly the right thing for everyone but it doesn't necessarily need to have like a stigma attached to it.

Having lived so much of their lives with weight stigma, participants were loathe to experience it in another form such as the misconception of WLS as an easy way out. This concern largely drove the decision to inform a select few in their lives about having the surgery. They didn't want to get derailed or defensive about the choice they had made; they felt good about the decision and wanted to reinforce that in any way possible. Facing stigma was one less thing they wanted to worry about and were determined not to let it get to them. Catherine explained, "They have a huge amount of negativity; they have no idea what it's all about. They have no idea, they just think that it's this magic little cure that you can do it and then you can eat anything you want at any time of day and night, and they have no idea. And there is no easy way to lose weight, this is just another difficult way to lose weight, you know?"

It's a marathon not a sprint.

In addition to the bias against WLS in the media and public opinion, participants understood that success depended on keeping a pace that was realistic for themselves. The concept that dietary adherence was a lifelong commitment without a specific endpoint that signaled the end of the process is at the core of the concept, it's a marathon not a sprint.

Weight loss surgery was viewed as a big decision to manage morbid obesity and the attendant co-morbidities. As Judy put it so succinctly, she was "ready for something big" and was aware that surgery was nothing like any diet or weight loss program she had tried. Because the surgery alters the digestive system dramatically through restricting

and/or malabsorption of food, the level of commitment is far greater than with any other method. For those who had the VGS or the LRYGB they would never be the same, literally. Even for those with LAGB, the commitment to having the saline ring adjusted periodically, living with a foreign device in their bodies, was not taken lightly. With the anatomical and physiological alterations created by WLS participants understood that they had signed on to a new system of dieting for life. Greta explained,

And I finally, finally have gotten my head wrapped around the fact that this isn't a sprint, that this is the rest of my life. And if it takes me five years to get there, that's okay because, look where I've gotten in a year. Because I started in March before the surgery with the pre-diet and I lost 30 pounds before the surgery. I never lost more than 50 pounds, period, ever, and I haven't been at this weight since I was 15 years old. I mean I got below 200 pounds last week, and the last time I remember being there was at 15, because by the time I was 16 and got my driver's license, I'd blown it through the water and it was a lie, what... my license weight was a lie. So now that there's a one in front of that number, I don't want to go back to a two, I can't look at another two. And it seemed like such an unattainable place to be and here it is. I don't want to go back, and that's what keeps me getting back on track.

Accepting the lifelong commitment of making different food choices and, when one has the occasional splurge, that there may be unpleasant consequences such as dumping syndrome, the participants did not regret what they had taken on. Jackie explained,

Well yeah, because you know, it's about moderation. Okay, you eat a French fry, you move on. But it also makes me think, did you get to the gym? Are you doing what you're supposed to do? Because I really have one change in my thinking that's occurred is I keep thinking about this is a marathon, you know? This is not a sprint and even though I would like to have those other 20 off, I'm extremely grateful as far as I've come. So just you know, I've got a long way to go but it's not about the weight. Yeah, if I keep thinking about deprivation then I'll never make it. And that's the way I used to think when I would diet, I'd think I can't have this, I can't have that. And so now what I tell myself is, I can have whatever I want, I

just, I don't necessarily want that anymore. If I only have this much room, how am I going to spend it?

The marathon not a sprint metaphor was one of the most meaningful for the PI as she had trained and completed two marathons about 10 years ago. In her case, the marathon was an event that came and went. She retired from long distance running but was forever changed by the experience. So too, the participants were profoundly aware of how they were in the marathon of their lives and using the tool; the knowledge gained thus far was paying off in a very big way.

Know what you're getting into.

Finally, the stage of Persevering naturally led participants to want to share their experience in order to impress upon others who are contemplating having the surgery to know what you're getting into-the remaining concept of this stage. They acknowledge the difficult path they forged to achieve successful weight loss, while appreciating that others who have not yet started to make their own path may benefit from their experience. Eddie's advice to the prospective WLS patient was, "Really, the issue is people have to decide, I'm going to make this life change and in my mind they have to be miserable enough at the previous weight that they're going to go through with it. It's not easy, it's hard work. They've got to do a lot of research on stuff that they like, they've got to build in some things that can help them and if they don't do that, it's going to fail like everything else. Stay away from supermarkets (laughs)."

The voice of experience also brought forth some strong opinions about who should have the surgery, at what age, and what method. John elaborated on this issue,

So I would say really consider it pretty strongly. Especially once they hit 40, 50. And personally, I don't like people who have it at young ages and

stuff, unless they're massively obese. Because they, I don't think, have enough years of trying the non-surgical way. And the other thing is, when you have it that young—and all this just might be nonsense opinion—but when you have it that young, there are so many easy ways to bypass these things. And before this one thing falls out of my head, that's a very good question. I would say, I see almost all of my overeating as to deal with my emotions. So I would say... anybody in the future having it? I would say deal with your emotional issues first and get a lot more help than just that 30-minute emotional thing which doesn't mean anything. You know the screening they do? Because I think it's all emotional. Other than staying alive, I think that's all it is, is to treat your emotions. At least it is for me.

Having successfully achieved significant weight loss gave participants a more authoritative voice to provide advice based on their real life experience. They became the authentic voice of the WLS experience and wanted their stories to be heard. Kelly crystallized the stage of Persevering with the following,

You know, it's kind of funny; I think I've had friends say, "Well when are you going to be done," or, "When are you not..." It's like whoa, what do you mean done? There's no done, this is forever. Yeah, this is forever. And I don't see... I mean again, I don't have a crystal ball. I don't ever see the lap band... I don't know if you can even necessarily have it removed but I guess you can totally open it to where the food, it's not going to hinder your food intake. But again, **it's a tool** that I'm using to get the weight off and then to maintain the weight. So I just don't ever see that changing.

Participants were altruistic in their eagerness to share their successes and challenges with others struggling with morbid obesity. They all had been there, down the road of yo-yo dieting for many years, waiting for and trying each new diet, whatever was declared "the next big thing." They arrived at the decisions to have WLS because it was time to do the "big" thing that was not based on conventional measures. They wanted others to know that it can be a life changing experience, not to be entered into lightly, but started with thoughtful consideration and openness to create one's own path to success. Catherine summed it up this way,

What else would I tell the new patients? Then I'd say go and do it. Don't wait 40 years to have it done. Do it, because it's fantastic. It's the best... Throughout all of these moans and groans and complaints and trials and tribulations, I'm still standing there with a banner on the other side saying, "This is the second best thing I ever did for myself in my life." So and I wish I'd done it you know, 20, 25 years ago. But I'm still in the process, I'm still only 18 months out. And I think you can't really say until probably this is a three or four year before you're really onto maintenance, as to how it really is going to be. I think probably it's up to about three years from what I can understand from my own progress, and just being a sensible, educated kind of consumer. I think after three years it's going to be what it is, you know, and the amount of burden that will be back on me will be or how much will power you have to have or how much you can eat or not eat and the level of how much you can cheat before you get dumping syndrome or whatever it is, and how many times you can miss the vitamins and the calcium before your levels start to go down and you really get... Now I've really got to do this, whether I want to or not. Even if you're feeling nauseated or even if you can't do this or even if you have to not eat food because you've eaten so many vitamin tablets, you know? You know, your stomach's filled up with calcium, you know? So I tell you, it's a challenge, a challenge, but it's great.

The Path to dietary adherence was a long, convoluted and often tortured one for WLS patients. The five distinct but overlapping stages-Surveying, Navigating, Discovering, Recalculating and Persevering-led participants to new levels of self awareness, of using their potential for success in their occupational and personal goals, and of appreciation for aspects of living that they can now fully embrace.

Summary

The research question, "What is the process of dietary adherence in adult post-weight loss surgery patients?" was investigated using a qualitative approach with Grounded Theory as the underpinning structure. The previous section described five stages of the substantive theory, The Path, that was discovered and articulated from the data of interviewing 16 participants. The five stages were identified as: Surveying,

Navigating, Discovering, Recalculating and Persevering. The core concept of The Path was identified as the central theme from which all five stages were generated.

Chapter V

SUMMARY, DISCUSSION OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

The purpose of this research was to identify the process experienced by adult weight loss surgery patients of adhering to the post-surgical dietary guidelines. The specific question was: What is the process of dietary adherence in adult post-weight loss surgery patients? Grounded Theory was selected as the framework by which to discover and understand the process WLS patients experience to adhere to the diet and to stay on course to achieve their desired weight loss goals. The literature is short on qualitative studies about WLS patients and how they achieve success after the surgery; most quantitative studies overwhelmingly endorse WLS as the most successful medical intervention to achieve significant, lasting weight loss for morbidly obese patients. Besides changes in pre-and post-surgery BMI, a common measurement of WLS success is quality of life (QoL) which includes measurements of improved physical and emotional health, social and occupational functioning, and self image. However, little research, prior to this study, delved behind the quantitative tools to learn how, on a day to day basis and over time, WLS patients actually achieve this success. The research described in this report summarized interviews with 16 individuals who had WLS from a period of eight months to three years post-surgery. As WLS is promoted and increasingly accepted as an option to treat morbid obesity, potential consumers should not only know about the statistical success of WLS, but how past and current patients developed a formula for success. This can only be learned through qualitative inquiry, as was achieved in this study, by asking WLS patients about the process to achieve

dietary adherence and their weight loss goals. This chapter will address (a) the methodology and significant findings (b) describe the substantive theory and its relation to existing research on WLS (c) relate the substantive theory to other models of processes of change for challenging life conditions (d) demonstrate the link between the substantive theory to The Transtheoretical Model and (e) describe the contribution of the findings and the substantive theory to the WLS literature. The chapter will conclude with a discussion of the study limitations, nursing implications, and recommendations for further investigations.

Methodology and Study Findings

Qualitative research is best applied to subjects who or phenomenon which have not been the focus of prior investigation. Weight loss surgery has been investigated primarily through quantitative research for many years yielding abundant data about the overall benefits and success of the surgery. However, few qualitative studies have attempted to describe the dietary adherence process of the WLS patient after surgery. The author's systematic review uncovered a dearth of qualitative research available to understand the experience of patients who undergo this life changing intervention (Jean-Pierre, Stevens & Tanawanit, 2007). Because the decision to have WLS is entered into by most with great care and deliberation, the factors leading to, during, and in the aftermath of surgery are essential to understand. Additionally, only having outcome statistics, through quantitative measures, can lead to oversimplification of the problem (Speziale and Carpenter, 2007). Clinicians and patients benefit from knowing more about the bio-psycho-social factors that lie beneath the numbers to fully prepare for the demands of WLS. Therefore, Grounded Theory was chosen as the design for the study

because it allows for an investigation which starts with a question. In this case, what do people who have had WLS, which has been unequivocally found to be the most successful medical intervention for significant and lasting weight loss, do to achieve success? The question was expanded through the semi-structured interview with open-ended questions to hear from those going through the experience about this process. In other words, how do WLS patients succeed and what is the process that contributes to success?

Strauss and Corbin (1990) established four criteria for evaluating the applicability of Grounded Theory research findings. These criteria are fit, understanding, generality, and control. In the current research the investigator successfully satisfied the standards of these criteria to ensure that the substantive theory derived from the data was true to the phenomenon of focus.

Fit refers to how the findings of the research match or resonate with the experience of the participants and professionals who were the intended audience of the study. The current research met this standard by virtue of having interviewed individuals who were living the experience and hearing from them about their efforts to adhere to dietary guidelines after WLS. Additionally, the investigator consulted with nurse managers from two WLS programs to learn of their concerns related to assisting their patients in the peri-operative period.

The research findings met the criterion for understanding by describing the experience, defining the process of dietary adherence, and using the language of the participants to identify concepts from which the substantive theory emerged. The theory

was written in clear, concise language. Verbatim statements of the participants about the experience of dietary adherence provided the vocabulary used to discuss the findings.

The generality of a theory is based on acquiring comprehensive data and identification of broad concepts which can be applied to similar phenomenon. The current research met this criterion through the process of identifying concepts from the verbatim interviews which were analyzed, grouped into conceptual categories, and finally, collapsed into the five sub-stages of the theory. An overarching conceptual category, The Path, emerged to describe a process of adherence to a specific medical regimen. The five stages identified in the substantive theory are applicable to similar conditions such as adhering to medication for individuals with serious mental illness, diabetes or heart disease, and reestablishing normal weight after anorexia nervosa.

Control refers to the accuracy and consistency with which the researcher has adhered to the methodology throughout the investigation. The investigator satisfied this criterion by establishing a system of data collection following the interview process outlined in Appendix D and using the semi-structured interview guide (Appendix F). The investigator consistently applied the constant comparative analysis method to determine how and if to modify data collection strategy. During the process of identification of the core concept, the researcher reflected on the data, the participants' own words and descriptions of their experience, to understand and develop the substantive theory.

The Core Concept, its Relation to Existing Research on WLS and Theoretical Models

The Path was the core concept which led to the substantive theory describing the process of dietary adherence of WLS patients. The Path signified the process by which participants achieved the desired goal of successful, lasting weight loss. However, The Path was not just about losing weight, it was also a journey of self discovery, with bio-psycho-social components, that led to myriad intra and interpersonal, physical, behavioral and emotional changes. The Path was comprised of five interwoven stages, through which the WLS patient moved, with periods of reviewing and revisiting earlier stages to continue the journey toward the desired goal. The stages began with Surveying: the decision to have surgery had been influenced by taking stock of past experiences, living with morbid obesity, dieting and regaining weight (yo-yo dieting), current health, occupational and interpersonal concerns, financial issues and tipping points that set the individual on the path to dietary adherence. Navigating was identified as the stage during which the individual used the surgery as a tool, the diet of high protein, low carbohydrates and small portion size as a tool, while learning that the diet was expensive and unrealistic. Learning how to manage the surgical and dietary tools despite the challenges gave way to success and progress on the path to dietary adherence which moved them on to the next stage. In Discovering the individual reflected on the progress and challenges encountered thus far on the path and considered the positive changes, especially improved health and appearance, while confronting interpersonal relationships which may have been supportive or non-supportive, accepting that the physical changes of surgery were on the body not the brain requiring a redoubling of efforts to stave off

eating as a form of emotional coping, becoming less reliant on and establishing a more collaborative relationship with the surgeon and team, and realizing that to be adherent to the diet, the individual had to create an individualized method of doing it “my way”. In Recalculating, the next stage of the process, the individual gained confidence in his ability to negotiate the diet while wrestling with the return of the appetite, cheating on the prescribed diet but cheating differently because of the physical and emotional changes left by the surgery, experiencing changes in health and physical appearance that were almost universally positive, reinforcing efforts of dietary adherence with exercise, reengaging with the surgical team and support groups, and finding new ways of socializing to maintain adherence and strengthen interpersonal relationships. The final stage of Persevering was when the WLS patient reflected on the progress made along The Path, acknowledging that to maintain the strides accomplished they must keep going at a steady measured pace (marathon not a sprint), be prepared in their daily lives to follow the diet, share their experience with perspective WLS candidates (know what you’re getting into), committing to not going back to pre-WLS patterns, and facing stigma with the knowledge that, despite the stereotype promoted in the media, WLS was “not an easy way out”. Discovering, Recalculating and Persevering were non-linear stages; the WLS patient cycled through them in a circular or spiral fashion. The individual returned to and revisited lessons learned earlier in Surveying and Navigating to reinforce and recommit to continuing on The Path.

Relation of Study to Existing Research of Qualitative Research on Weight loss, Maintenance and WLS

A wealth of research supporting the benefits of weight loss surgery has been compiled over the past 20 years. The majority of the research was conducted using quantitative methods demonstrating successful achievement of lasting weight loss over time for a majority of the WLS population. However, a number of studies also indicated that a small but significant percentage of WLS patients failed to achieve the goal of lasting weight loss and the accompanying improvements in co-morbidities (Chen et al., 2009; Puzziferri, 2005). Some researchers have attempted to understand the factors contributing to lack of success for this minority population of WLS patients with results attributed to pre-surgical eating disorders and compensatory eating behaviors (Chen et al. 2009), unrealistic expectations for surgery (Bauchowitz et al. 2005), and lack of adherence to post-surgical office visits and attendance at support groups (Harper, Maden, Ternovitz & Tichansky, 2007).

The few qualitative studies found in the literature focused on the actual experience of WLS patients after surgery to understand more of the challenges they faced and decision making processes they employed to be adherent and achieve the desired weight loss goal. The substantive theory of the current research, The Path, describing the process of dietary adherence after WLS had not been identified in previous research of WLS patients. Findings from existing qualitative studies on the same or similar phenomenon were related to emotional reactions, changes in relationship with food, and factors which challenged the participant in the post-weight loss period.

The results of the current study will be compared with five qualitative research studies on similar populations and research questions. The sub-stages of the substantive theory will serve to focus the comparison to illustrate how the current research conforms or diverges from existing research. Each study reviewed identified an overarching concept or central theme which contains similar language and meaning to describe the lived experience of the participants. These include Striving for a Thinner Self (Bigwood & Buckroyd (2005); Control (Ogden, Clementi & Aylwin, 2006); Transformation (Sutton, Murphy & Raines, 2009); The Tightrope Walk of Weight Maintenance (Lindvall, Larrson, Weinehall, & Emmelin, 2010), and Satisfaction versus Satiety (Magdelano, Chaim & Turato, 2010). Only corresponding concepts or themes found in existing research will be compared with the stages of the current research.

Surveying.

Participants in the current study entered The Path taking stock of subjective data of living for many years with morbid obesity and attending to objective data from health professionals and environmental cues that they were “ready for something big”. Additionally, they educated themselves about the methods of WLS, the pros and cons of restrictive versus malabsorptive and combination techniques, costs and recovery time. Other studies identified a similar stage of self reflection to decide when participants were ready to take aggressive action to lose weight.

Bigwood and Buckroyd (2005) interviewed 18 obese adults on their experience of trying to lose weight using conventional weight loss methods. Using semi-structured interviews the researchers sought to understand the experiences and feelings of participants during weight loss efforts in order to provide improved support and

guidelines for success to patients seeking advice on weight loss methods. Researchers used a purposive sampling approach to recruit participants age 18 or older, with BMI measures of equal to or greater than 30. A cohort of 16 women and two men self referred to participate and submitted to individual interviews (N=8) or focus groups (N=10). Interviews were semi-structured using open-ended questions to elicit personal experiences about size and weight. The authors identified a stage of awareness they labeled, “Excessive eating can lead to food addiction”. Participants reported life events that started them on a course of overeating, either because they had left jobs or assumed a more sedentary lifestyle that resulted in greater access to food, eating more and exercising less. One participant described her food addiction,

It’s like today, I had lunch [at a function] and because everybody else was putting small portions on their plate, I had a small portion because I didn’t want everybody else to see the fat person and ‘Look how much she’s eating’. So I just had the same portion as everybody else and I came home and I stuffed myself because I wasn’t full up. I stuffed myself with all the rubbish. I didn’t need to eat anything else, my body didn’t really need it, but it was like, wanting the food (Bigwood and Buckroyd, 2005, p. 224).

Further the authors attributed political and socio-economic factors, particularly the availability and marketing of fast food, nonstop advertisements in the media promoting high fat, sugary, and carbohydrate laden food, to food addiction. They also cited poor government oversight of the commercial food industry and failure to promote educational programs on diet and nutrition in communities. Finally, they identified sedentary life styles as another reason for food addiction. (p. 227)

Ogden, Clement and Aylwin (2006) used Phenomenological Interpretive Analysis in their qualitative study which explored patients’ experiences of having obesity surgery.

Fifteen patients (14 women and one man) who had undergone WLS were interviewed using open-ended questions such as, ““Why did you decide to have the operation? How have you felt since the operation? Has the operation changed how you feel about food? Has the operation changed how you feel about yourself.’ ” (p. 277).

Ogden et al. identified a similar personal inventory process as in Surveying in the current research, of “personal weight histories” in which participants reported being overweight since childhood to gaining weight gradually over several years. Becoming obese was attributed by most participants in Ogden et al. (2006) to various health events such as pregnancy, illness or genetic factors. The authors noted this perception as an important finding and in contrast to the belief of most health professionals who view obesity as a psychological problem. Most participants had attempted traditional weight loss methods with moderate success but eventual return to previous weight. “Throughout these personal histories emerges a central sense of a lack of control, with patients feeling out of control both of their weight gain and also of any subsequent weight loss.” (p. 279) The personal weight histories of participants influenced them to have WLS.

The research of Lindvall, Larrson, Weinehall, and Emmelin (2010) based the substantive theory of the Tightrope Walk of Weight Maintenance on heritage or familial factors that participants incorporated into their diet and exercise behaviors. Using a Grounded Theory approach the researchers examined weight maintenance of middle age participants (age 42 to 65 years) who had maintained weight level or weight loss goals through non-surgical interventions at normal to overweight BMI measurements for equal to or more than 10 years.

Twenty-three participants engaged in in-depth interviews to tell their story in their own words, and using an interview guide, covering questions about social support, occupation, self esteem, community and environmental influences, physical activity, and food habits. The substantive theory of “The Tightrope Walk” was composed of four levels of “tightrope” challenges in descending levels of difficulty based on the balancing factors of food choice and exercise, (1) to be in control, (2) to find the routine, (3) to find the joy, and (4) to rely on heritage. Each tightrope level included strategies or factors which created challenges or facilitated balance. The shorter, wider and tighter the rope is, the easier it is to keep the balance or to maintain weight. The length of the rope symbolizes an individual's hereditary prerequisites for weight maintenance. The width of the rope symbolizes prerequisites in terms of the support an individual needs or can access in order to maintain weight. The tightness of the rope symbolizes the mental preparedness an individual needs or has to maintain or change weight (Lindvall et al., 2010, p. 5).

At each level participants described family rituals and hereditary tendencies that were either protective or risk factors to weight maintenance. For example, participants in Level One, “To be in Control”, the most challenging level described as a long, thin, loose rope, came from family backgrounds that did not practice healthy diet or exercise behaviors. These participants were more vulnerable to weight gain and required strict adherence in their diet and exercise routines to maintain their balance on the tightrope. Whereas, participants described in Level Four, “To Rely on Heritage”, the shortest, tightest, and widest tightrope walk, reported an easier walk because they were not genetically predisposed to weight gain, and, therefore, sometimes were inconsistent

with diet and exercise routines. Because they were not prone to weight gain they managed periods of chaotic eating with periods of diet consciousness. Another subtype of this tightrope walk level was the participant who was a strict adherent to a diet and the exercise regimens learned in childhood. They reported high levels of self awareness about how veering from the routine made them vulnerable to fatigue and illness. Being aware of their familial patterns was an important component to weight maintenance for participants in this study.

There were similarities in findings of the research of Bigwood and Buckroyd (2005), Ogden et al. (2006), and Lindvall et al. (2010) and the current research stage of Surveying. Each study found that living with obesity, morbid obesity or having a hereditary tendency to poor diet and exercise routines had significant consequences for health and well being, and influenced decisions on how to lose or manage weight. However, participants in the current research did not attribute as much significance to external sources of control for their success or lack thereof in losing and maintaining weight prior to WLS as described in Bigwood and Buckroyd (2005). Perhaps this was because these participants had achieved a higher level of acceptance that they had reached a point of no return with their health and weight. In the current study, during Surveying, participants reported making a subjective analysis of their dire health status coupled with objective information from the surgery team. Additionally life events held sway on participants increasing their resolve to live longer and healthier in order to be alive to see their children grow up, not become physically dependent and a burden to grown children, or to simply be alive because they “had too much to do.”

In Ogden et al. (2006) a theme of, “The process involved in deciding to undergo obesity surgery” was more consistent to that described in the current research in Surveying. In discussing the processes of deciding to have obesity surgery, participants described general motivations associated with psychological and physical deficits they were increasingly suffering due to obesity. They also identified triggers such as significant health problems or the threat of more severe health problems should they not lose weight, to seek more effective treatment for obesity. The authors noted that the processes involved in deciding to have surgery represented a paradigm shift in participants’ views of self-control and choice to accept responsibility for their weight and accompanying health problems, rather than viewing their plights as the result of genetics or illness. They also noted that by making the decision to have surgery that participants paradoxically gave up control by admitting that behavior change in the form of dieting and exercising was not enough to lose or maintain weight. “This in line with the patients’ analysis of their personal histories, as it reflects a central role for control as they describe feeling out of control of their weight, out of control of any attempts at weight loss and express a desire to shift the control of their problem over to something outside to themselves.” (p. 281) Participants in the current study described more self awareness of and accountability for how they became obese than those described by Ogden et al., referring to eating as a form of coping with emotional stress, being in denial of the consequences of poor diet and lack of exercise, and feeling increasingly compelled to do something to change the course in which their lives were headed. They did not attribute their obesity status to genetics or medical illness although some female participants in the current study attributed weight gain to pregnancy.

Participants in Lindvall et al. (2010) did not report experiences that required them to make a life altering decision as did participants in the current study. Maintaining weight, for the Lindvall et al. participants, was about the family background and traditions to a greater degree than for those in the current study. Heritage was influential to the degree that participants wanted to continue those traditions, but that they were willing to modify heritage factors to achieve a goal of weight maintenance.

Similar to the “Tightrope Walk of Weight Maintenance” in Lindvall, et al., the stage of Surveying in the current research described how participants reflected on the past, present and speculated about the future should they not take drastic action or do “something big” to remedy the situation. As information about WLS options and costs were reviewed the individual sketched out a route that formed the basis for The Path. During Surveying the WLS patient plotted a course that was a combination of clearly defined aims and roughly imagined steps ending with a commitment to The Path.

Navigating.

In the current research, first level coding concepts about the diet were consolidated to include (1) surgery as a tool (2) the diet as a tool (3) the diet is unrealistic, and (4) the diet is expensive. These concepts formed the basis for the second stage of The Path: Navigating.

Ogden et al. (2006) reported similar findings in the broad category of, “the impact of surgery”. The authors identified many consequences of surgery on participants including initially feeling unprepared for the discomfort following the diet, and regret that they had made a mistake in choosing surgery. But this feeling of shock and regret gave way to behavioral adjustments as they learned through experimenting with food

choices. Some participants indulged in more fatty and sugary foods, while others made a conscious effort to make healthier food choices such as salads, vegetables, and high protein foods. Corresponding with the finding of the current research, “The surgery is a tool”, participants in Ogden et al., described the reinforcing effects of the surgery on self control due to the smaller volume of the stomach pouch and the onset of “dumping syndrome” if they ate too much, too quickly or unwisely. These adverse events caused participants to avoid overeating or eating foods that would trigger nausea because it was not worth feeling sick (p. 283). The authors also noted that surgery had altered participants’ relationship with food particularly that there was a gradual reduction in the pre-surgical status of thinking about food constantly to less focus on food and eating as a source of emotional fulfillment. “Furthermore, the results suggest that although, for some, this increase in control was experienced as relating directly to their new stomach size, others believed that they had relearned to control their eating behavior in addition to any physically imposed limitations.” (p. 287)

The only nursing study found to identify a similar process analysis with the current research was by Sutton, Murphy and Raines (2009) in which they used a qualitative phenomenological approach to interview weight loss surgery patients. The study cohort was 14 females with similar characteristics of race, age, education, marital status, and type of WLS as in the current research. The focus of the research was to explore the experience of female weight loss surgery patients in the post-operative period of 18 to 24 months, described as a time of rapid transformation. The authors conducted individual interviews, using a “grand tour”, semi-structured interview method to inquire about the experience of having WLS. Participants were asked to describe the

experience at four specific time frames, (1) immediate days and weeks after the surgery (2) returning home (3) the first six months after surgery and (4) six months and beyond. These time frames became the main thematic categories under the overarching theme of Transformation.

In the time frame, “The immediate days and weeks after surgery”, participants in Sutton et al. described similar reactions as reported by Ogden et al. (2006) and the current study. Pain and buyer’s remorse were themes which emerged from the interviews. Most described feeling uncomfortable which led them to question the decision to have surgery. Participants described managing these concerns by focusing on the diet guidelines provided by the surgery team particularly eating slowly and chewing thoroughly. Relying on the instructions was comforting in warding off the pain and remorse about the surgery. This was a similar experience reported by the participants in the current study. Having a set of specific instructions from the surgery program about what and how to eat helped them in the early weeks and months navigate the post-WLS diet. The dietary guidelines provided structure and resulted in weight loss which was reinforcing to adherence.

During the “Returning Home” time frame in Sutton et al., not being hungry emerged as the major theme. Participants reported the lack of appetite came as a surprise and, although welcome, not having the pre-surgical method of eating to cope with emotional stress, created uncertainty about how to manage during this transition period. Participants in the current research confirmed the finding of not being hungry in the immediate post-surgical period. They also reported surprise at how difficult it was to consume the amount of protein, water and vitamin supplements required in the dietary

guidelines leading to the supporting concept of, “The diet is unrealistic”. Further, participants in the current study reported that the commercial protein products were expensive and that they had to experiment with many different ones before finding an option that was palatable and affordable.

Magdaleno, Chaim and Turato (2010) sought to understand the alteration of the eating impulse arising after bariatric surgery specifically how hunger is transformed after surgery in the experience of physically achieving satiety and the feeling state of satiety. The researchers sought to understand morbid obesity as a psychological disorder. Additionally, they asked, was WLS a therapeutic intervention that imposes a structure on the individual to cope with primitive drives and feeling states differently or was WLS non-therapeutic which further frustrated the individual forcing him to revert to different ways of using high calorie liquids to satisfy oral needs?

The authors used a clinical-qualitative design to interview seven female patients who had submitted to bariatric surgery at one hospital in Sao Paulo, Brazil from 18 months to 36 months post-surgery. The researchers selected this post-operative period because of the data supporting increased appetite and emotional conflicts which trigger return of pre-surgical disrupted eating patterns in WLS patients. Participants ranged in age from 28 to 49 years of age. Using a similar open-ended semi-structured interviewing approach and method of data analysis as in the current research, Magdaleno et al. (2010) reviewed and compared the taped and transcribed interviews to identify a phenomenological set of major categories. Three categories emerged from the data: (1) transformation of hunger after bariatric surgery (2) hunger as a non-symbolizable element in morbid obesity, and (3) satiety versus satisfaction.

In the category, “transformation of hunger after bariatric surgery”, Magdelano et al. (2010) reported reactions of participants in the immediate post-operative period including that participants experienced hunger as a physical pain, weakness, or emptiness. (p. 429) Similar to the other studies reviewed and in the current research, the authors postulated that after surgery participants experienced a change in hunger due mostly to the structural changes imposed by the surgery itself. They interpreted the initial more rapid alleviation of hunger to the decreased volumetric size of the stomach. This finding was consistent with the current research, supporting the concept in Navigating of “the surgery is a tool.” But Magdelano et al. reported that participants experienced an unleashing of psychic hunger that they could no longer squelch by over eating and for which they needed psychological and nutritional support to manage. Those participants that did not seek or receive such support were at risk for reverting to unstructured eating but using different methods than before surgery such as constant grazing on small bites of food. One participant stated, “I can’t take a plate of food and eat. . .not any more. . .but I keep nibbling, nibbling, nibbling.” (p. 430)

Participants in Sutton et al. mourned the loss of food as a form of coping with emotional stress as well. In the current study, participants acknowledged that they could no longer engage in chaotic eating after surgery because of the new reality of their anatomy which presented challenges to coping. The reactions to and challenges presented in the immediate aftermath of WLS reported in the stage of Navigating in this study were confirmed as common experiences in Ogden et al.(2006), Sutton et al.(2009) and Magdelano et al. (2010). A significant difference in the findings of the current

research was that participants did not report feelings of “buyers’ remorse” or psychic hunger as reported in the other studies reviewed.

Discovering.

In the current research, the core concepts incorporated in Discovering were (1) positive relationship with the surgeon/team (2) I want to do it my way (3) coming to terms with change and the same old, same old (4) surgery on the stomach not on the brain (5) interpersonal relationships-the good and the bad. In Discovering participants not only continued the methods and unique efforts they developed to stay adherent to the diet. They also spoke with a mixture of surprise and satisfaction about the ways they coped during the post-operative period with challenges in their personal, occupational and social relationships as well as discovering new strengths within themselves that helped them remain committed to The Path of dietary adherence

Positive responses reported in the current research during Discovering largely related to feeling satisfied with how well they were coping with the dietary guidelines. Improvements in self-esteem led to reinforcement of their commitment to remain adherent. However, participants also reported feeling increasingly annoyed and/or bored with the post-surgery diet. They began to experiment with taking matters into their own hands by eating small bites of restricted foods or occasional alcoholic drinks. The concept of “I want to do it my way” was important to this stage because it signaled that the participant desired greater control over dietary decisions and that in order to succeed, they had to find a method that reflected who they were. This was a similar finding in Ogden et al.(2006) Some participants in the current research began to question advice from the surgical team about the diet itself, but also, for those who had LAGB,

suggestions to “fill” the saline ring inside the band. Realizing that they were a better judge of how to eat and when and if to fill the band, participants challenged the advice and assumed more control over these decisions.

Another revelation in the current research during Discovering was the participant learning that despite the positive changes resulting from WLS and dietary adherence, they were still the same person. Additionally, they came to terms with the fact that the “surgery was on the body not on the brain” and that realization engendered a sense of urgency to be more in control of the post-WLS diet. This finding was strongly supported in the qualitative literature of WLS.

Sutton et al. reported that in the time frame of “the first six months after surgery” the two major themes of this period were rapid weight loss and coping with loss. They also commented on the effortlessness of weight loss during this period which led to a false sense of security. But with the welcome success of the surgery came feelings of loss associated with the change in participants’ relationship with food. And while they learned new forms of coping or being involved in new activities, participants missed being able to use food as a source of pleasure (p. 303).

Magdelano et al. (2010) reported a similar experience of coming to terms with the body/brain dichotomy described with brutal honesty by one participant, “What was operated on was the stomach, the head is the same, right? When I was weighing one hundred and thirty kilos, I could serve myself one, two ladles of rice, a load of beans, salad, steak, roast chicken and I would eat. I can serve myself the same amount now, only I won’t eat this quantity. But for my eyes, when I see a plate (of food), I have the sensation that I am going to eat all of it. (Magdelano et al., 2010, p.434)

Other discoveries in the current research were a mix of positive and negative results especially in the area of social relationships; stresses experienced with close friends and relatives were among the greatest threats to staying on The Path. As others in their social network noticed the participant had lost a significant amount of weight, interpersonal relationships were re-categorized into those who were supportive (the good) and those who were not (the bad). Ogden et al. (2006) and Sutton et al. (2009) reported similar observations of changes in social relationships.

Bigwood and Buckroyd (2005) reported findings that included stresses encountered by participants during weight loss efforts were related to prejudice and stigma of obese persons. The authors reported that rather than wanting more control over decision making about dietary choices, participants reported that they needed more assistance from health professionals, interpersonal supports, community and government at all levels. Participants were described as more easily discouraged or demoralized by their lack of success, and failed to muster the motivation to keep trying. (p.224)

Bigwood and Buckroyd reported a finding consistent with the current research and Sutton et al. which was that participants became bored with diets, whether they were traditional methods or post-WLS guidelines. However, rather than taking responsibility for getting off track and finding measures to “individualize” the diet as participants did in the current research, participants in Bigwood and Buckroyd reported feeling that weight loss was not a goal they could sustain because too many factors were out of their control. Eventually, many participants in Bigwood and Buckroyd discontinued the diet and/or exercise program and regained the weight they had lost.

Recalculating.

This stage generally began after nine months to one year post surgery when certain specific physiological and psychosocial processes converged. The concepts of this stage were (1) embracing the new body (2) the appetite returns (3) new ways of socializing (4) cheating but cheating differently than with other diets (5) reengaging with professional support (6) be prepared and (7) the role of exercise.

“Embracing the new body” was a reported by participants in the current research as a continuation of the positive results of WLS first noticed Discovering. Other research included in this review supported this finding including Lindvall et al. (2010) in describing weight losers and maintainers being motivated by improved health status, appearance and social functioning. Ogden et al. (2006) also reported that participants experienced significant improvements in self-concept, body image and quality of life. As in the current research, participants in Ogden, et al. reported liking the way they looked, feeling more comfortable in social situations that, prior to surgery, had been difficult to endure.

“The Appetite Returns” was an unwelcome but expected occurrence for participants in the current study. Having lost up to 70 pounds or more in the first year without significant food cravings, they were aware of increased appetite and triggers to eat that resulted in slowing of weight loss. This finding was also reported in Sutton et al. (2009) during the six months and beyond time frame. Participants reported satisfaction with the weight loss achieved thus far but were aware that it was occurring at a slower pace. In the first six months participants in Sutton et al. reported weight loss

of 70 pounds or more, but afterward it might take three months or more to lose an additional 20 pounds. (p. 304).

Most participants in the current study managed these cravings by eating more of foods allowed on the diet such as low fat cheese sticks or nuts while some were innovative and used their culinary skills to create alternative “junk” food. Participants also described returning to the dietary guidelines of small portions, high protein and low carbohydrates as they had in the early days and weeks after WLS. Food journals and counting calories were also effective in warding off the potential loss of control to cravings.

“New ways of socializing” described in this study during Recalculating was supported in Ogden et al. (2006) as participants reported they no longer considered food and eating as their main source of entertainment. Similar to the participants in the current research, those in Ogden discovered more outlets such as physical activity, family interactions and household chores that were enjoyable and meaningful. Lindvall et al. (2010) reported similar responses of weight losers and maintainers participating in physical activities for relaxation and social engagement. Magdelano et al. (2010) reported that despite continuing to struggle with psychic hunger after WLS, participants sought out alternative methods to achieve satisfaction in other areas of their lives, but they did not report on the specific methods employed to achieve satisfaction.

Along with efforts to fend off food cravings, participants in the current study reported that during Recalculating they cheated but cheating was different than before surgery. Star and Catherine described having very small portions of junk food or candy that they would consume over several hours rather than seconds. Participants

emphasized the importance of moving on from lapses or mistakes and getting right back on track. Similar strategies were reported in Lindvall et al. (2010) among weight losers and maintainers who described themselves as “weekend celebrators”. They indulged in more calorie laden meals and enjoyed alcoholic drinks as a reward for maintaining a strict weekday routine. (p.7)

Another aspect of cheating but cheating differently was reported in the current study which described the occurrence of dumping syndrome, a wave of nausea and physical discomfort after eating large pieces, dry or sugary foods. Discomfort and the desire to avoid dumping syndrome was a sort of failsafe mechanism for participants in this research, as well as in Ogden et al. (2006), and Sutton et al. (2009). These adverse events caused participants to avoid overeating or eating foods that would trigger nausea because it was not worth feeling sick. (Ogden et al., 2006, p. 283).

A major strategy to counter the return of the appetite, as well as to build on the successes of the surgery and dietary adherence, was a commitment to exercise. Participants not only increased the time and effort during workouts, they took on challenges such as training for 2, 5 even 10 kilometer races. Many joined gyms or signed up for dance classes not only for the exercise but for the social benefits as well. This was supported by Ogden et al. (2006), Sutton et al. (2009) and Lindvall et al. (2010).

Bigwood and Buckroyd (2005) reported that participants combined restrictive diets with exercise regimens in the traditional weight loss programs. Exercise programs rated high among participants, and coupled with diets, were viewed as a very effective approach. One participant stated,

The exercise does do what it says, it gives you a buzz. You've just got to get round to it. And if I have enough exercise, particularly in the evening, I have the most wonderful night's sleep and I wake up and I feel great. I think you need to start the diet and actually stick to it; then I think the exercise will follow because you'll feel like doing it more (Bigwood and Buckroyd, 2005, p. 225).

The relationship with the surgeon and WLS team re-emerged as important in the current study during Recalculating. Participants who attended support groups not only benefited from hearing about what other WLS patients were doing to remain adherent, but they also reported feeling connected to the surgeon and other health professionals on the team. Most participants in the current study kept all scheduled post-WLS appointments and even called their surgeon, nurse manager or nutritionist if they had questions about changes in their routines.

Professional support was identified as significant to weight loss success by Bigwood and Buckroyd (2005) who reported that the lifestyle changes needed to overcome obesity could not be maintained without ongoing professional help. Sutton et al. (2009) specifically emphasized the role of the nurse in the post-WLS period; nurses were reported to offer support and help patients establish routines for diet and exercise. (p.309). While Magdelano et al. (2010) warned that bariatric surgeons may inadvertently induce maladaptive psychological states because of the alteration in the structure of the digestive system which effectively blocks the individual from engaging in exaggerated eating to cope with emotional stress. They concluded, "For this reason, health teams should be aware that carrying out a surgical procedure should necessarily be accompanied by an efficient psychotherapeutic process." (Magdelano et al, 2010, p. 435)

Being prepared was a final but significant concept in the current research during Recalculating. Participants described making their morning protein shakes at home and sipping them in the car on the way to work. They packed their lunch with foods allowed on the diet and kept a water bottle filled by their side throughout the day. Some participants, such as Sonya, described the perils of grocery shopping without a list making her highly susceptible to impulse buying of restricted foods such as candy.

Participants in the current study learned strategies in support group about how to manage eating in restaurants by ordering appetizers instead of entrée portions, asking servers to pack up half of the order as soon as it arrived at the table, and looking past the high carbohydrate offerings at parties or after work “happy hours”.

Bigwood and Buckroyd (2005) reported that participants using traditional weight loss methods had more difficulty making wise food choices in social settings. Lindvall et al. (2010) reported that weight losers and maintainers benefited from thinking of food preparation as an art or cause by deciding to only purchase groceries from organic or “fair trade” markets.

Recalculating was a significant stage in The Path. The success of the previous months or years was becoming more difficult to maintain, and participants in the current study were faced with serious challenges to stay on track. The other studies in the review did not specifically refer to a similar stage or theme, but many supported the need to redouble efforts to maintain adherence to weight loss goals.

Persevering.

The participants in the current research described the stage of Persevering as a time when they were acutely aware that the WLS experience was a marathon not a sprint,

and that they had accepted a course of a lifetime of diet, sacrifice and hardship in order to stay alive and enjoy improved health conditions. They understood that WLS was “not an easy way out” and fended off criticism of uninformed family and friends who accused them of “cheating” by having WLS. They committed themselves to not going back using a variety of methods, and they wanted to share their experiences and wisdom with prospective WLS patients by encouraging them to “know what you’re getting into.”

Lindvall et al. (2010) reported that weight losers and maintainers employed similar strategies of “marathon not a sprint” by structuring their lives with healthy behaviors that became habits in order to stabilize their weight. “They were comfortable with consistent food habits and did not feel any need for weekend treats. They did not like too much sweet or fat food and would rather reward themselves by reading a book or taking a walk than by eating food.” (Lindvall et al, 2010, p. 5)

The concept that WLS was “not an easy way out” as reported in the current study was supported by Ogden et al. (2006). They reported that participants struggled with food cravings after WLS but were buffeted by the changed configuration of the stomach that made it difficult to overeat. But even with the presumed benefit of a smaller stomach chamber, it was a challenge to adhere to the rules of eating-small portions, thoroughly chewed food, solids first, liquids last. Following the rules on a day-to-day basis was a challenge. Catherine, a participant in the current research, captured this sentiment succinctly, “There is no easy way to lose weight, this is just another difficult way to lose weight, you know?”

Having achieved and maintained weight loss for longer time frames than with previous weight loss efforts, participants in the current research were determined to not

regain weight. “No going back” described the concept and measures employed to keep on track with the diet and exercise routines to ensure ongoing success. This finding was supported in Sutton et al. (2009) who reported that participants, despite the hardships after WLS, said they did not want to go back to pre-surgical weight problems, and they would agree to have WLS again. (p.304)

Finally, participants in the current research stated they were interested in educating prospective WLS patients to help them “know what you’re getting into”. They listed patient education, preparation, self reflection and readiness as important to the process leading up to having WLS. This finding was supported in Bigwood and Buckroyd’s study (2005) in their assessment of participants who encountered obstacles during the course of traditional weight loss efforts, “This study has shown that these obese people want to lose weight, but need detailed advice on healthy eating and exercise, plus on-going support at both a professional and social level. Many may also need counseling to explore their psychological use of food and issues such as low self-esteem and body image dissatisfaction. (Bigwood and Buckroyd, 2005, p. 228)

This finding was also supported by Magdelano et al. (2010) in their description of the impact of WLS on the psychological experience of hunger. The surgery removes a coping strategy and changes the patient’s relationship with food. They recommend that surgical teams have a strong counseling program for the prospective WLS to prepare them for this life altering event.

The review of qualitative research on similar populations of individuals who sought to lose or maintain weight yielded support for many of the findings of the conceptual categories of The Path. The review was not exhaustive but provided

evidence that the current research methodology and analysis conform to existing knowledge about the phenomenon. Differences in findings of the current research which were not consistent with other similar qualitative studies included the concept of control over eating impulses before and after surgery. Bigwood and Buckroyd (2005), Ogden et al. (2006), Sutton et al. (2009) and Magdelano et al. (2010) noted challenges faced during weight loss efforts to assume control over the emotional and behavioral aspects of weight loss. They described participants in their research as struggling and seeking to give control over to professionals or other institutions such as the commercial food industry, community or government leaders. In the current research participants acknowledged that control over eating remained a challenge but they described themselves as fully accountable for the behavioral and emotional factors that contributed to becoming morbidly obese. Despite the finding of Navigating, “the diet is unrealistic”, participants in this research assumed control over finding acceptable alternatives. Findings on the dimension of control in the current study were more consistent with those of Lindvall et al. (2010) on weight losers and maintainers who were described as aware of their genetic predispositions and familial traditions that made them vulnerable to weight gain, but taking matters into their own hands to manage these factors.

Secondly, the current research did not concur with the view of morbid obesity as a psychological disorder. While 19% of participants in this research listed depression as a co-morbid condition associated with obesity, the majority of participants would meet the definition of mental health according to WHO (2010). They were gainfully employed, married or had meaningful family and social relationships, and, despite their weight and co-morbidities, engaged in activities consistent with the expected developmental tasks of

adulthood according to Erikson (1980), generativity versus stagnation. Additionally, most led active lives, were involved in their communities, and practiced numerous hobbies before WLS. To characterize the cohort of this study as psychologically disordered diminishes the significant personal resolve, resilience and fortitude they exhibited. The current research did not find that the surgery itself had created new psychological problems for participants. But pre-existing disorders of depression and disordered eating continued to require psychological intervention. Conversely, many participants reported feeling improvements in symptoms typically associated with depression such as physical energy, libido, sleep, socializing and self esteem (APA, DSM IV-TR, 2000). Participants in this study experienced psychological challenges post-WLS but the surgery itself could not be construed to cause new or additional psychopathology.

Relationship of the substantive theory to other process of change theories.

The substantive theory of the current study, The Path, describes a process of change that is both challenging and rewarding. The question which drove the research was, “What is the process of dietary adherence of adult post-WLS patients,” which could only be learned from individuals who were going through the experience. Other investigators have identified similar processes of change for individuals to overcome health challenges such as living with and recovery from serious mental illness (Shea, 2010), anorexia nervosa (Weaver, Wuest & Ciliska, (2005), and stroke (Wood, Connelly & Maly (2010) Similar metaphors of movement as those in the current study and those reviewed above, describe processes of change and movement toward a goal or journey (Weaver et al., 2005), the tightrope walk (Lindvall et al., 2010), transformation (Sutton

et al., (2009), and striving (Bigwood & Buckroyd, 2005). Three qualitative studies which identified the process of change for individuals experiencing challenging life circumstances will be reviewed and related to the current study. These and the collection of weight loss related studies reviewed will be linked to the Transtheoretical Model of Prochaska and Diclemente.

The Theory of Self Recovery.

Shea (2010) described the process of self-identity reconstruction in people diagnosed with schizophrenia. Using a Grounded Theory approach, Shea identified a substantive theory which emerged from interviews with ten individuals living with schizophrenia and four significant others of the cohort. A six-stage process of self-recovery described the successful challenge of caring for a new-self and the eventual recovery of self-identity. The Theory of Self-Recovery (Shea, 2010) consists of stages labeled: Entering the territory, struggling for control, active self-care, finding a social fit, checking the self out, and coming back normal.

The patient diagnosed with schizophrenia faces the lifelong challenge of managing an illness which is not fully understood by psychiatrists and other mental health professionals. Schizophrenia is categorized as a serious mental illness (SMI), meaning that it is a disease process that, without treatment or consistent adherence to medication and psychosocial therapeutic intervention, follows a downward course of declining self care, impaired social, occupational and cognitive functioning. Even when the patient is adherent to a plan of care-taking medications and participating in psychosocial interventions-he may experience acute episodes of psychosis and social withdrawal. With each relapse episode the patient with schizophrenia faces a more

difficult course of regaining functioning in all areas of life. Therefore, to enter into the realm of recovery, the individual must engage in a multipronged treatment strategy which includes self care, adherence to medication and psychotherapeutic interventions, and social support. The Theory of Self-Recovery (Shea, 2010) describes the process by which participants sought to regain their identities which had been buried under the devastating symptoms of schizophrenia. Similar to The Path of adherence to post-WLS dietary adherence of the current study, the Theory of Self-Recovery describes a multistage process of change to improve quality of life and gain control of an illness that has created significant obstacles to engaging in life. Shea created a model of a slow circuitous process of growth and change. Factors which contributed to the process of “Coming Back Normal” include accepting the diagnosis of the illness that requires lifelong engagement in and adherence to treatment, assessing the consequences of being engulfed by the illness, and tapping into resources of the self that have been temporarily buried under the devastating symptoms of the illness, and accessing social support, both existing personal and community supports and newly discovered sources, to continue the process toward recovery.

In the current research social support was important throughout The Path, but particularly significant during the stage of Discovery. Participants received feedback, positive and negative, about their weight loss from family, friends, and work associates. For some participants, the most critical comments of WLS came from family and close friends. This forced participants to re-examine prior relationships and seek support from other sources. Two common sources, and resonating with Shea and the stage of finding a social fit, were professional support and the members of the post-WLS support groups.

Participants described the importance of being able to hear and learn from others who had gone through the same or similar experiences. Similar to participants in Shea, being with these supportive WLS friends allowed participants to more freely reflect on the changes in themselves and feel normal. As in Shea, participants in the current research, by virtue of the decision to have WLS, accepted that dietary adherence would be necessary for continued weight maintenance for the rest of their lives.

The Theory of Self Development.

Weaver et al. (2005) sought to understand how women recover from anorexia nervosa (AN). Using a GT approach, seven women who self identified themselves to be in recovery or recovered from AN, were interviewed. The investigators used the constant comparative analysis of Glaser (1978) and Glaser and Strauss (1967) to capture common threads of experience which were coded and grouped into theoretical concepts. A substantive theory of self-development emerged from the data which described the process of how recovery from “perilous self-soothing to informed self care.” (Weaver et al., 2005, p.191)

Three common threads organized the process: self-differentiation, self-awareness, and self-regulation. In order to understand the experience of recovery from AN, the investigators elicited detailed histories of the participants’ experience living with AN and how they reversed the course of perilous self-soothing of disordered eating, which for some took them close to dying from the obsession, to finding themselves and putting themselves on a path to recovery. Similar to the current research, Weaver et al. created a model of a staged cyclical process of recovery from the depths of the illness to reestablishing an identity based on a balanced view of self. The stages were: Perilous

Self-Soothing, Not Knowing Myself, Losing Myself to the AN Obsession, Finding Me, and Celebrating Myself.

Women were found to begin to recover once they engaged in finding me, a complex process of learning about self, recognizing the problematic nature of AN, and preparing for behavioral change. Women became self-aware through reflection and getting in touch with inner experiences. They self-differentiate by evaluating their own role in relationships and building a repertoire of assertive skills better to address their needs and perspectives. (Weaver et al., 2005, p.202)

However, a difference in Weaver et al. and the current study is that the process of self-development established the last stage, Celebrating Me, as an end point. The substantive theory of The Path assumed that the WLS patient will be cycling through the stages, particularly Discovering, Recalculating and Persevering for the rest of their lives. Another significant difference in Weaver was that professional help was not recommended for patients entering the process of self discovery. The authors explained that, despite giving up the AN obsession, participants remained uncomfortable with health professionals who did not listen to their concerns and held preconceived notions of their needs and responses. The authors concluded that health professionals walked a fine line between caring for the patient with AN and providing necessary medical and psychological support. In contrast, participants in the current study valued the collaborative relationship with the surgical team.

The Process of Community Integration after Stroke.

The experience of a hemispheric stroke with the ensuing emotional crisis, devastating impairments in, or loss of, physical ability and self care is a life altering event. Wood, Connelly and Maly (2010) sought to understand the process of community re-integration over the first year following stroke through a qualitative, longitudinal

design using a GT approach. Ten participants who had suffered a first hemispheric stroke with left-hemiparesis, but without aphasia, were interviewed at four time frames in the first year. Questions included: ““What are your roles? How have your relationships changed? What do you do to fill the time?”” (Wood et al., 2010, p. 1047)

Using the constant comparative analysis method of Corbin and Strauss (1990), Wood et al. identified a process of community re-integration which involved achieving a set of post-stroke goals including gaining physical function, establishing independence and adjusting expectations to get back to real living. The authors developed a model of the process of community reintegration which illustrated the cyclical movement through attainment of the goals toward the re-integration.

The stroke patient may initially view himself as a stroke “victim” which, if that view persists, significantly limits the prognosis for reintegration. Moving from a self image of victim to survivor occurs as the individual attempts a series of small but significant efforts to regain self-care abilities. Participants identified achievements such as being able to get dressed and feed themselves, facilitated this identity shift. However, the authors also found that stroke survivors were often resistant to accepting the help of others, particularly after leaving the hospital. They were challenged to accept assistance from those in the social support network without promoting more dependence. This balance between accepting assistance and asserting their need to gain independence resonated with the findings of the current study as WLS patients sought to be adherent to the post-WLS guidelines by “doing it my way”. A key finding of Wood et al. was that, at each transition point, participants experienced decreased confidence which they regained as they progressed through the next stage. “. . . the findings of the current study

emphasize that the expectations set by the stroke survivor themselves are most important to community reintegration. Stroke survivors need to re-evaluate and reset their expectations to a level congruent with their new ability. (Wood et al.,2010, p. 1053)

The three qualitative studies reviewed describe substantive theories of processes of recovery and re-engaging in life after suffering the effects of devastating physical or mental illness. Each study reviewed and the current research, reveal portraits of people with stigmatizing illness that are not often recognized by health professionals. The participants emerge as courageous and resilient despite being burdened by their conditions for many years. How they move forward and fashion meaningful lives while dealing with the impact of the illness or condition is related to processes of change. The phenomenon of interest of each study presented unique challenges for the individual which defies comparing one against the other. But common threads among the phenomenon exist. First, whatever the medical or psychiatric illness, the journey of recovery begins with the individual. Second, recovery is a combination of cognitive, emotional, and behavioral efforts which is different for each individual. In Weaver et al. (2005), participants recovering from the anorexia nervosa set out on a journey to establish self awareness based on knowing themselves, rather than on an ideal physical image. In Shea (2010) the individual with schizophrenia also reconstructed a self-image that was not dominated by the illness but an integrated view of self from pre-illness to living a meaningful life while managing the condition. In Wood et al. (2010) the individual recovering from stroke reconfigured the self image through personal goal setting and accessing available social and community support. In the current research, the WLS patient built on the self knowledge that led them to the decision to have

surgery, and achieved the desired aims of improved health and more fully engaging in life. The path or journey began with the self and was sustained by the individual accepting that they had control of the process.

Relationship of the Substantive Theory of the Path to the Transtheoretical Model of Prochaska and DiClemente

The findings of the GT research reviewed and the current research have roots in the Transtheoretical Model (TTM) of Prochaska and DiClemente (1983; 1992) “The goal of grounded theory is the generation of theory and the refinement of existing theories.” (Speziale & Carpenter, 2008, p. 138). The substantive theory of The Path links with TTM and the process of change as they both describe stages the individual moves through in order to achieve a goal, usually associated with improved health. The substantive theory of The Path identified five stages that the WLS patient experienced to be adherent to the post-WLS dietary guidelines. Ultimately, the process is not only about diet and weight loss, but about self discovery, as similarly described by Shea (2010), Weaver et al. (2005), and Wood et al. (2010).

The Transtheoretical Model (TTM) of Prochaska and DiClemente (1992) was the product of the theorists’ inquiries into the reasons that persons treated for addictive behaviors, such as smoking, drug, and alcohol abuse, had such poor results despite well structured and administered therapeutic programs. The TTM provided a framework to understand the process of change that leads to long term behavior modification. The central organizing construct of the theory is the Stages of Change (Velicer, Prochaska, Fava, Norman & Redding, 1998). TTM identified the stages of change (SOC) and processes of change (POC) which were initially applied to the treatment of addictive

behaviors such as gambling, smoking, substance abuse, abusive relationships, and eating disorders. The theory has been subsequently applied to business and social research to examine how change occurs and what methods and policies foster change.

Both SOC and POC describe the readiness, cognitively, emotionally and behaviorally, of an individual, group or organization to change a maladaptive behavior, method or practice. Further, TTM defines change as a process with predictable stages that are spiral, not linear, which an individual passes through, sometimes repeatedly, when attempting to alter a problematic lifestyle or behavior. The stages are:

1. Precontemplation-the individual is not considering changing his behavior, has no awareness or concern that his behavior is problematic, although his family, friends and others in his social network are concerned.
2. Contemplation-the individual begins to acknowledge the problematic nature of the behavior and becomes increasingly aware of negative consequences, such as a smoker who is not able to complete a strenuous hike with his peers because he becomes short of breath early into the hike. During this stage the individual begins to imagine what life would be like without engaging in the behavior, perceives the social, medical and emotional consequences of the problem, and determines that there would be net gains from discontinuing the problem behavior.
3. Preparation-the person plans to make changes in the problem behavior by engaging in small steps toward the goal of change. Perhaps the smoker experiments with smoking fewer cigarettes each day or changes to a different brand or type, such as filtered or non-filtered cigarettes. During this stage the

individual considers other factors to help make the change more manageable, such as the smoker considers the triggers for craving cigarettes and what he needs to do to minimize exposure to or cope differently with triggers. The individual may set a quit or change date and report his plan to a few select individuals who will be supportive of the change plan.

4. Action-the person begins a program formally through seeking professional help or through self-initiated measures to change the behavior. The action phase continues from day one to six months of continuing the effort to change.

“Modification of the target behavior to an acceptable criterion and significant overt efforts to change are the hallmarks of action” (Prochaska & DiClemente, 1992, p. 1104).

5. Maintenance-efforts to solidify the change and to prevent relapse are characteristic of this stage. Maintenance begins at about six months after action has been in effect and the behavior has ceased or been significantly altered; measures to keep the change on track, deal with stressors that may induce relapse may continue for up to a year or possibly be a lifetime effort. The Alcoholics Anonymous credo of “One day at a time” is an example of abstinence as a lifetime goal requiring daily self appraisal, focus on sobriety, and using coping strategies (Anonymous, 2002). The TM assumes that relapse will occur despite an individual’s sincere intention of changing the problem behavior; change is viewed as a process with swings or spirals between stages.

Accepting that relapse is a part of change added a new dimension for the individual and the supporting program or professional. Generally, once an effort to

change has begun, if the person relapses, he returns to the contemplation stage but rarely reenters precontemplation; this allows for reflection on readiness, and other factors that contributed to the failed attempt. In other words, the process does not begin anew, the individual gets back in at or near to the point relapse occurs. Health professionals and counselors who incorporate TTM into their practice are able to support the relapsed individual to reenter the process of change with modified plans of actions and cognitive preparation to enhance their efforts for success.

Because of the spiral nature of change an individual may reenter and exit the SOC numerous times before sustained change is achieved. The TM considers relapse a normal part of the process that should be anticipated and understood to better prepare clients for the experience of changing their problem behavior.

Processes of change are divided into experiential and behavioral categories. Experiential processes are cognitive signs that the person is considering the impact of the problem behavior on quality of life. They include consciousness raising, dramatic relief, environmental reevaluation, self reevaluation, and social liberation. Behavioral processes include stimulus control, counter-conditioning, reinforcement management, self liberation, and helping relationships (Velicer et al., 1998).

During the earlier SOC the experiential processes are more active as the individual responds to a variety of social, cognitive and environmental cues about his problem. He may become aware of the impact of the behavior on his relationships, work or health, begin to imagine what life would be like if he stopped the behavior, consider alterations in his environment; it may be cleaner, or easier to invite friends over to his residence if it does not always smell of smoke. He engages in self re-evaluation. What

might he be like if not engaging in the behavior? He becomes liberated by not having to expend so much time and effort to secure the tools of the problem and /or to insure being located in the places in which to engage in the problem.

The decisional balance is the weight, pro and con, given to changing the behavior by the person. In the earlier SOC, precontemplation and contemplation, the cons outweigh the pros. As the person enters into planning and action the decisional balance reverses to assessing the change effort in more positive or pro factors. Understanding the decisional balance of SOC is useful to health practitioners in considering intervention strategies.

The five stages of the substantive theory of the current research share many similarities to TTM. The Path identified a similar set of stages and processes that contribute to the goal of dietary adherence after weight loss surgery. Although the phenomenon of the current investigation was the experience of WLS patients, the substantive theory could be applied to overcoming other adverse health conditions.

Applicable conditions might include the diabetic patient adhering to diet and exercise guidelines to control serum glucose levels or the hemodialysis patient adhering to the high protein, low electrolyte dietary guidelines.

The first stage of The Path, Surveying, has links to precontemplation and contemplation and planning. By the time the WLS patient enters surveying, he has had years of adversity related to living with morbid obesity, and has tried and failed many times to lose weight using conventional methods. This is consistent with the concept of experiential balance of TTM (Velicer, et al, 1998). The decision to seek treatment using a surgical weight loss method has been made by taking a personal inventory based on

subjective data and accepting the objective data about his dire health status which has come from a trusted health care professional; this is described by the concept of “the path defines the process”, and “ready for something big”. Other concepts that are active in surveying are the method of WLS and money or the cost of WLS which influence the process. Incorporated into Surveying is TTM concept of decisional balance; the experiential processes have risen to conscious awareness. The WLS patient has spent significant time weighing the pros and cons of continuing to live with morbid obesity, recurring efforts with traditional weight loss efforts, or going forward with surgery (ready for something big). The patient entered the stage of planning during Surveying by attending informational meetings, choosing a surgeon, and making life preparations—environmental, interpersonal and occupational—to reduce stressors to be ready for the challenges of following the post-WLS diet.

Navigating has corresponding features with the stages of planning and action in TTM. Participants attended informational meetings, completed the various health inventories and diagnostic tests, followed the liquid protein diet for at least two weeks prior to surgery; these measures educated them about WLS and the immediate aftermath. But soon the participant learned that after surgery, a big change had occurred in their anatomy which could not have been anticipated despite all of the pre-surgical information they acquired (the surgery as a tool); they learned that the diet was unrealistic and expensive. The post-surgical diet, although carefully developed by bariatric surgeons and nutritionists, was labeled unrealistic by participants in the current research because it was very difficult to incorporate all of the guidelines, protein consumption, in particular, throughout the day. In the first six weeks to two months,

participants were instructed to consume up to 70 grams of protein each day in the form of high protein shakes. But even as liquids, participants stated it was very difficult to return to work and their pre-surgery responsibilities while trying to consume the required protein quota.

Experiential processes continued to influence the individual during this time. As reported in Magdelano, Chaim and Turato (2010) and Sutton, Murphy and Raines (2009), the WLS patient may experience intense post-surgical pain or psychic hunger brought on by removal of a fundamental coping strategy-eating in response to emotional stress. According to TTM relapse or regression is expected in the early action period. The Situational Temptation Measure is an objective tool to determine the intensity of urges to return to the problem behavior. This is balanced by self-efficacy, the situation specific confidence of the individual that he can manage urges or temptations to return to the problem behavior (Velicer, et al., 1998).

To avoid the risk of giving up and returning to pre-WLS disordered eating, participants followed the diet very strictly (the diet of high protein, low carbohydrates and portion size as a tool). They also made adjustments in their expectations so they did not feel they were failing. According to TTM they activated processes of change; behavioral measures such as stimulus control, counter conditioning, and accessing helping relationships to avoid relapse.

Discovering had similar characteristics as action in TTM. Most discoveries were positive and reinforcing dietary adherence. But participants realized they needed to individualize the diet (I want to do it my way), and they recognized that despite the success of losing weight, they were still struggling with demons from the past (surgery on

the body not on the brain). With changes in their weight, came changes in the views of themselves, but at the same time, they encounter many of the same social, occupational and relationship challenges as before surgery (coming to terms with the changes and the same old, same old.) They were confronted with some surprising and unwelcome reactions from their social support which forced them to re-evaluate relationships-the good, the bad. As the WLS patient juggled all these factors they sought assistance from the surgeon and team to help keep them on track. Balancing temptation and self-efficacy was important to adherence during Discovering as was activation of behavioral processes.

After several months of following the diet, engaging in exercise, and continuing to benefit from the improved health and social functioning after WLS, the individual entered a similar stage to TTM of maintenance; they tried to solidify the changes and prevent relapse. The stages of Recalculating and Persevering capture the essence of maintenance. Participants were challenged by factors such as the return of the appetite, knowing they could cheat on the diet yet not have a complete set back. However, if they relapsed it might be modified by the surgery itself-the tool. With the threat of dumping syndrome, getting back on track was desirable. But for the most part, the changes since WLS had been extremely positive which served to increase self-efficacy and reinforce motivation to continue with the diet or a modified version in order to maintain the benefits.

Behavioral processes such as exercising, and finding new ways to socialize other than social eating were important substitute activities to ensure adherence to The Path. Participants re-engaged with the professional support of the WLS team and developed close ties with members of post-WLS support groups. All of these activities

required that participants remained mindful of being prepared so they could stave off triggers to veer off the diet.

They also kept themselves motivated by keeping expectations realistic (marathon not a sprint), fighting off the misconception that WLS was an easy way out, and using various cues or environmental processes to remind them they were not going back to pre-WLS behaviors. Finally, they were eager to share their experience with prospective WLS patients as mentors and to help those contemplating surgery to know what they are getting into.

The Path supports and is consistent with the stages of TTM. A unique aspect of the WLS experience of dietary adherence is the surgery itself. As participants stated, the surgery is a tool, and ultimately, the stages of change are about using the tool to achieve successful weight loss. The tool is related to self-efficacy because it assists the WLS patient have confidence that he can stave off triggers to relapse. Even if the patient gives into temptation, there is the automatic negative event of dumping syndrome, a stimulus control that discourages them from getting off track. But just as taking medication to control symptoms of schizophrenia cannot alone restore a person back to functioning and engaging in life, neither can WLS or the prescribed diet be the source of the change. The Path, as stated before, was not only about the diet or losing weight. The Path was as much an inward journey of discovery of character strengths and personal resolve for the individual to live in the most fulfilling way possible.

Deciding to have WLS might be likened to purchasing an automobile. A vehicle, no matter what make or model, has one common function-transportation. Models come with other attributes such as fuel economy, luxury or reliability.

Similarly, WLS methods, the three most commonly chosen by participants in this study in particular, all have the common function of treating morbid obesity; each method offers different features that were attractive to participants for different reasons. This was exemplified in the concept in Surveying, “the method defines the process.” When the participant “purchased” the method or tool, the method became the vehicle by which a participant entered The Path and continued to drive to stay on course. The Path, ultimately, was about how each participant maneuvered his/her vehicle through the unmapped conveyances of the post-WLS period. The vehicle did not drive itself, rather it was controlled by the driver guided by a roughly sketched map that would sometimes find the driver getting off course or stuck. The process described in The Path was about how the driver used thoughtful reflection and determination to reroute the vehicle to get back and stay on track.

Contribution to the weight loss surgery literature

This research was an in-depth inquiry into the day-to-day efforts of WLS patients to adhere to the post-surgery dietary guidelines. The core concept of The Path described a process with five stages through which the individual passed and to which they recycled to achieve dietary adherence. The Path was unique for each individual but each had a common goal-achieving and maintaining weight loss to achieve life enhancing results. The current literature on WLS does not include a similar in-depth analysis of the process of dietary adherence of WLS patients at various peri-operative time periods. This research describes in rich detail, culled from interviewing those who were living the experience, what it was like and what they did to achieve their goal. A specific finding of this study was that the surgeon/team was a partner in the process. The patient

benefited from the ongoing relationship but was best served when the relationship was collaborative. The WLS patient found a path that fit his individual needs-it was not one size fits all. The surgeon/team provided the expertise and outline for The Path, offered guidance and support along the way, but the patient figured out how to achieve adherence by doing it “my way”.

A second significant finding was that participants reported that the post-WLS diet was unrealistic and expensive. Patients had difficulty months and years post surgery consuming the required protein, vitamins and liquids on a daily basis. They describe having to create a highly organized plan to have protein, supplements and liquid sources on hand throughout the day, and often found that, despite their best efforts, they fell short of the guidelines. This has not been reported in the WLS literature. Most quantitative research report that up to 20 percent of WLS patients relapse into disordered eating (Bauchowitz, et al.,2005). This may contribute to misdirected interventions by WLS professionals who focus counseling on avoiding restricted foods rather than assisting the patient manage the demands of the diet itself. Additionally, the current research found that the patient is burdened by the cost of commercial protein products. Patients also reported that many powdered or bar protein options were unpalatable. Providing the patient with a more accurate estimate of the costs involved of these protein sources could improve adherence or allow the patient to search for discount products. Surgery teams and nutritionists should monitor patient protein intake, as well as supplements and liquids, and devise more realistic guidelines. Further, surgery programs should consult with companies that manufacture the protein products in order to improve the offerings available to patients.

Another important finding of this research was that the patient who opts for WLS to treat morbid obesity continues to experience stigma and prejudice from members of their social support network. Stigma associated with obesity has been reported to be a deterrent for many patients to even consider or inquire about WLS as a treatment for morbid obesity (Puhl, 2009; Schwartz, Chambliss, Brownell, Blair & Billington, 2003). Health care professionals, particularly those in primary care settings, may not recommend WLS to eligible patients because they assume these patients are not up to the challenge and would not be good surgical risks (Powers, Rehrig & Jones, 2007). In the aftermath of WLS, despite the overwhelmingly positive outcomes, the perception among many in their social support network was that the participant was “cheating” or taking “an easy way out”. This was a source of emotional distress for the patient (Applegate & Friedman, 2008; Myers & Rosen, 1999).

This investigation identified a process of adhering to the post-WLS diet which involved an organized, sustained plan to be successful. Health care professionals can assist prospective WLS patients with the plan by beginning to introduce the option of surgery earlier in the treatment. Rather than wait for a patient to cycle through another round of “yo-yo” dieting, inform him about the option of WLS, why he is a candidate and what the scientific literature reports about success. Using the substantive theory of this research informed by TTM, the health care professional can initiate the stages of change by opening up the conversation about WLS with the patient earlier on in treatment. It may be months or years before the patient moves from precontemplation to contemplation about WLS, but receiving information from a trusted health professional will assist in the process.

Limitations

The findings of the study were limited by many factors. First, participants resided in a limited geographic area which may not represent the population of interest adequately. Second, participants who agreed to participate were possibly more comfortable sharing their experience because they had positive stories to tell. All participants had heard about the study from their WLS surgeon or from another health provider. Those who were not as optimistic or positive about their experience or had not maintained contact with their surgeon may have had very different experiences, such as poorer outcomes, which they may have been hesitant to discuss with a stranger. Third, subjects were at various points post-WLS which, on one hand, allowed for the depth and richness of detail obtained. On the other hand, the findings cannot be generalized to the entire post-WLS population because there is no specific time period after surgery that dietary adherence was experienced. Challenges to dietary adherence varied in intensity during different stages after WLS. Lastly, the research was limited by the small sample size.

Implications for nursing practice and research

The current study is one of few qualitative investigations of WLS patients by a nurse researcher. Despite the important roles played throughout the WLS process, and the tradition of close, ongoing contact with patients, nurses have not generated very much new knowledge about WLS. This research informs the nurse manager, bariatric surgery unit staff nurse, primary care nurse practitioner, community health nurse and psychiatric mental health specialist about the substantive theory, The Path. Nurses in many settings can influence outcomes by applying the theory while providing care of the morbidly

obese patient who may be a candidate for WLS; the theory may be helpful for post-surgical treatment as well. Understanding the needs of patients before, during and after surgery will help in the implementation of appropriate interventions throughout the patient's obesity treatment program. A key finding of this research was the importance of establishing a collaborative relationship with the patient throughout the WLS experience. Through collaboration, the WLS patient feels in control yet guided by the expertise and support of the health care team. Nurses must increase outreach to patients who become disengaged from the surgical team. Encouraging patients to follow up with office visits and attend WLS support groups can help ensure dietary adherence and improve post operative outcomes.

Nurses who specialize in the care of obese clients, at the primary care, community or staff nurse levels should be informed about appropriate interventions to initiate the conversation about WLS to potential patients and those already considering surgery. The WLS patient who has relapsed or is struggling to regain his footing on The Path can be educated about relapse and how to re-enter the path at or near the point of relapse. Nurses at all levels must accept that weight loss is a process not an end. Just as in other conditions that require lifelong adherence to medication or diet, nurses must be open to the reality of relapse and not respond to lapsed WLS patients with frustration. Rather, nurses must employ knowledge of change theories such as The Path, described in this report, and TTM when planning care.

Nursing education.

Promoting awareness of change as a process must be part of nursing education starting in foundations and fundamentals of nursing courses. Application of TTM or

substantive theories such as The Path must be integrated into nursing curricula as a core competency so that, from the beginning, a nursing student is considered an agent of change. Nursing students enter their first clinical experiences with populations that display the ravages of treatment resistant medical conditions often associated with morbid obesity. Nursing faculty must guide students to enhance their patient assessment skills that include asking: What are your goals? What do you need to achieve your goals? What are you prepared to do to change your situation? How can I help you do this? How would you like to start? These assessment strategies establish the collaborative spirit of the nursing student –patient relationship. Instilling the collaborative mindset from the beginning of training prepares nurses to incorporate these assessment and problem solving strategies into their professional careers.

Nursing practice.

In advanced practice settings, nurse practitioners and clinical nurse specialists can continue the assessment process described above and apply process of change theories to raise awareness about WLS as a treatment option for morbidly obese patients. During primary care visits or while treating an acute episode of a co-morbid condition, the nurse can discuss WLS to potential candidates, going over the pros and cons, providing literature or a referral to a WLS center for excellence. For those who elect WLS, the NP or CNS can educate the patient about transitioning to a high protein, low carbohydrate and small portion size diet. Creating colorful handouts with photos or realistic illustrations of meals that conform to the guidelines will assist patients understand what to eat and how to prepare foods on the diet. Included in this weight loss counseling, the NP or CNS should include cost estimates of high value protein options. Throughout the

interaction with the patient, the nurse should expect and accept negative reactions but not be discouraged if the patient shows little motivation to change. The conversation must continue with the next contact, and the next.

In mental health settings, advanced practice psychiatric nurses (APRN) provide support for the emotional consequences of living with morbid obesity. They must provide a therapeutic climate for the patient to discuss their latest diet effort, and reframe the negative views associated with “yo-yo” dieting to teach the concept of relapse. The relapsed dieter should be considered as much of an expert on diet methods as the practitioner. The APPN can use solution focused interventions such as assessing, What worked for you during your latest diet? What did you learn? How did you feel as you were losing weight? What did you notice about yourself during that time? How did that feel? What was helpful or not helpful to you? Is there anything you did while you were dieting that you still do? Is there anything you did that you stopped doing but would like to do? Are you interested in doing something different? Have you considered WLS? Regardless of the response to these assessment questions, the APRN must remain accepting of the patient’s choices while conveying an attitude of hope that any small step is significant.

Many WLS programs refer patients to private mental health practitioners for counseling when they are struggling with emotional challenges after surgery. WLS programs should employ APRN’s to provide the counseling onsite in order to ensure the patient receives the needed psychological support.

Another contribution that the APRN can make is to develop sensitivity training programs for health professionals to promote a more balanced view of obese and

morbidly obese patients. Stereotyping obese patients as mentally ill or non-compliant contributes to the patients' reluctance to discuss weight related problems in primary care and specialty care settings. Obese patients delay seeking treatment out of concern that the problem will be minimized as a weight issue or not treated aggressively because the health professional may blame or criticize the patient for their illness whether it is related to obesity or not (Puhl, 2009; Puhl & Heuer, 2010; Schwartz et al., 2003).

Advanced practice psychiatric nurses can participate in in-service programs in health care settings to raise awareness of prejudicial behaviors among health care professionals toward obese patients. They should model an approach of respect and hope with every patient. Eradicating discrimination of obese patients should be part of nursing and medical education so that practitioners begin their training with the most positive attitudes about every patient. A basic value of the professional must be that every patient has the right to the best care available, and has potential to benefit from that care.

Nurses working in WLS settings can offer educational programs for the social support network of WLS patients to increase awareness of the process of The Path and to reduce stigma and prejudicial judgments. Nurses can be instrumental in correcting misperceptions among the social support network of the WLS patient especially that WLS is "cheating" or "an easy way out".

In WLS follow up visits, the nurse can engage in stage specific assessments of how the patient is managing the post-WLS dietary guidelines. Since one assessment approach does not fit each stage along The Path exactly, nurses need to be more cognizant of the specific challenges that patients in Navigating are facing versus those in Persevering so they can offer stage appropriate support and guidance to the patient. It is

essential for WLS nurses to understand process theories to tailor the nursing care to meet the needs of patients at different stages of change

Community health and occupational health nurses can consult with local or work site based programs on healthy living with morbid obesity. Many private gyms and public recreation programs offer Boot Camp style programs to promote physical fitness among members and residents. Nurses can offer diet and weight loss counseling at these Boot Camp sessions and conduct weight loss history assessments to identify individuals who may be candidates for WLS. Creating colorful handouts with illustrations of meals with appropriate food choices and serving size, not only lists, can reinforce the concepts of health food choices and portion control. The nurse can offer periodic follow-up sessions to assess how participants are progressing in their diet and weight loss goals, and if those who have been identified as WLS candidates are ready to receive more information or be referred to a WLS center for excellence.

During the current investigation the PI attended WLS seminars at local hospitals and observed that the staff usually was not overweight or obese. Listening to a normal weight health professional discuss WLS might not inspire confidence that the program was sensitive to the needs of the potential patient. While an employer cannot discriminate against a normal weight nurse who desires to work in a WLS program, employers might consider recruiting employees from the WLS population who are qualified health professionals. This can add a dimension of credibility and confidence in the WLS patient that the health professionals know more than just facts about WLS.

Another observation of the PI was that during WLS seminars there was a presentation by a successful WLS patient who lost 100 pounds or more after surgery.

This “before and after” display did not promote an accurate view of the process of WLS. Therefore, WLS seminars should include presentations by patients who are newer to the process, perhaps three months, and then others at six months to one year or longer post-WLS intervals to more accurately illustrate the transition that occurs in physical appearance and health status. WLS programs must not only sell the surgery, but also the process or, as it was identified in this research, the reality of WLS as a “marathon not a sprint”. Surgical teams can offer a buddy system in which a patient who is one year or more post-WLS is paired with one who is just beginning the assessment process, to establish an immediate bond of mentoring and partnership that will promote adherence to the dietary guidelines as well as staying connected to the WLS program.

Participants in this research reported that protein powders and bars were unpalatable and expensive; recommended protein sources were difficult to access, vitamins were difficult to swallow and liquid consumption often fell short of the guidelines of post-WLS instructions. Surgery teams, particularly nutritionists, need to return to the drawing board, informed by their patients’ experiences, to create a more realistic and affordable diet. For example, rather than recommend the special protein formulas only available as powders, could nutritionists suggest protein sources easily acquired in grocery stores and suggest how to prepare at home as purees or soups?

Nurses must acknowledge the importance of and become proficient in using technology to provide support for the WLS patient. Web based support groups, remote video meetings via Skype, FaceTime, and email can promote post-WLS follow up for those reluctant to attend face to face meetings. This measure may encourage less confident or struggling WLS patients to stay in touch with the surgery team. Relapse

interventions can be provided using technology tools such as weekly email with suggestions to get back on track.

Policy

There is currently a public health initiative in the United States to promote awareness of the health risks associated with obesity. The current administration, spearheaded by the efforts of First Lady Michelle Obama and the Let's Move program, has targeted childhood obesity as a national health priority (www.LetsMove.gov, 2012). The program conforms to theories of change to promote awareness of healthy lifestyles in children and families. Using elements of TTM, specifically processes of change which are experiential and behavioral, Let's Move strives to reverse the trend of high rates of obesity in the U.S. by educating children about the benefits of physical activity and healthy diet choices. While this program has been condemned by critics as an example of government overreach into the lives of Americans, the fact that Let's Move fosters a positive attitude toward healthy lifestyle, teaches as well as demonstrates specific measures children and families can incorporate into their everyday lives, makes it a model worth the support of professional nursing organizations and nursing leaders. The American Nurses Association has endorsed the program and should support candidates for national, state and local political office who vote to pass and fund legislation of similar public health and weight loss initiatives. Let's Move and similar programs should be considered one aspect of raising awareness of and changing behavior toward the problem of obesity. Health care policy must continue to encourage similar community health prevention programs, as well as secondary and tertiary prevention programs to slow the progression of obesity. This requires nursing to be

prevention oriented rather than illness focused. Nursing practice should aim to promote healthy lifestyle education with obese and non-obese patients.

Research

This research generated opportunities for further inquiry. This study could be replicated on a larger scale, with more participants from several sites throughout the United States, including participants from rural areas. Since there is a large cohort of WLS patients who do not follow up with the surgical program, research must occur to understand what contributes to this phenomenon. Investigations should focus on recruiting participants who disengaged from surgical programs after WLS and those who sought guidance and support from web based resources. Broadening the participant pool will test the substantive theory of The Path and continue to generate more accurate post-WLS data to better respond to the needs of this population.

The findings of the current research could be used to develop a quantitative measure of post-WLS dietary adherence. Some of the questions which formed the semi-structured interview (Appendix F) could be adapted and written as five point likert-style inventory items such as, “Since WLS I have been adherent to the post-WLS diet” or “Since WLS I have veered of the post-WLS diet”, “Since WLS my life has changed in positive ways” and so on, with response parameters of strongly disagree to strongly agree. A quantitative tool would result in more data to understand the post-WLS experience and learn more about challenges to dietary adherence.

The current study could be modified to a mixed method approach comparing quantitative outcomes of patients who had different surgical methods (LAGB, LRYGB,

and VSG) with qualitative interviews focusing on many of the same questions in the semi-structured interview guide of this research. This approach would add depth to understanding what, if any, differences exist in the process of dietary adherence based on surgical method.

The average age of participants in this research was 47 years. Some participants stated they wished they had not waited until middle age to have WLS; they suggested that WLS surgery should be recommended for younger people struggling with obesity. Zeller, Roehrig, Modi, Daniels and Ing (2010) reported that adolescents who meet the criteria for WLS are appropriate candidates for surgery. Research comparing WLS outcomes of adolescents (14-17), young adults (18-30), middle adults (31-45), and late adults (45-65) would yield useful data. A longitudinal design following each age cohort at one, three, and five year intervals could add useful data about how each cohort meets the challenge of dietary adherence.

Finally, a qualitative study could be designed to learn about the WLS patient's experience of nursing care in the peri-operative period. Since the relationship with the surgeon and surgical team was reported as very important to participants of this study, nurses need to learn more about how WLS patients view the contributions of their care. The study could follow a similar semi-structured interview format using grounded theory to guide the process. Learning more about the nurse's unique role in the WLS process will assist in developing evidence based care to promote successful outcomes for patients.

Summary

This chapter reviewed the significant findings of the research which asked, “What is the process of dietary adherence in adult post-WLS patients? The substantive theory of The Path, generated from a qualitative research approach with Grounded Theory as a theoretical framework, was described. Research conducted on similar populations striving for weight loss or maintenance was reviewed and demonstrated to confirm many of the findings of the current research. Research conducted on populations which generated a substantive theory of a process of recovering from or living with other life altering conditions was compared against the substantive theory of this research. The links of the substantive theory of this research, The Path, with The Transtheoretical Model were demonstrated. Significant contributions of this research were identified, specifically that the process of dietary adherence is best served through a collaborative effort between the surgery team and patient, the current dietary guidelines and instructions patients are given to follow after WLS are unrealistic and expensive, and that the WLS population continues to experience stigma and prejudice, particularly among their social support network, from the misconception that WLS is “an easy way out”. Implications for nursing included that weight loss surgery teams must incorporate stage appropriate interventions to promote successful outcomes, increase onsite availability of mental health nurses to provide counseling for WLS patients, and should strive to present WLS as a change process with predictable periods of relapse. Ideas to promote the collaborative relationship between the WLS team and patient were discussed, specifically using the stages of change to assist the patient control the process of dietary adherence, and to improve patient engagement in the post-WLS period by expanding the use of web

based technologies to offer a variety of ways for patients to stay involved with the surgery team. Suggestions for applying the findings and promoting understanding of processes of change theories in nursing and medical education, primary care, community health and mental health settings were discussed. Public policy programs endorsed by professional nursing organizations were recommended in support of early childhood and family education programs on healthy lifestyles. More research to validate the substantive theory of The Path was proposed, specifically broadening the participant pool and adapting the methodology of the current research to create a quantitative tool to measure dietary adherence.

Appendix A

Dear Health Care Provider,

I am very grateful to you for agreeing to place copies of this letter in your office waiting room to inform potential volunteers of the following opportunity to participate in a study.

Dear Prospective Participant,

I am a student in the Doctor of Philosophy Program in Nursing at The Catholic University of America in Washington DC. I am conducting research on the challenges faced by adults who have had weight loss surgery, or bariatric surgery, to treat morbid obesity. Specifically, I am interested in understanding the challenges faced by those who have had weight loss surgery to eating and adhering to the dietary restrictions after surgery. I am recruiting volunteer subjects for this qualitative study who meet the following criteria:

1. Are 18 to 65 years of age?
2. Have had any method of weight loss surgery at least 3 months or more prior to the interview.
3. Can converse in English.

Volunteers will be asked to choose and participate in either an individual interview or focus group with up to 8 other volunteers at a prearranged location. Time commitment is approximately 45-60 minutes for individual interviews and 60-90 minutes for group interviews. All volunteers will be offered a \$35 gift card in appreciation for their participation in the study which will not be withheld if they choose to withdraw prior to completion of the interview. Only anonymous demographic information will be obtained e.g. age, gender, time since surgery, type of surgery, race, education level, marital status. However, no personal identifying data will be requested. All interviews will be audio recorded and later transcribed to a written record that will contain no identifying information about the subjects. The study has been approved by the Catholic University of America Office of Sponsored Programs and Research Services Committee on the Protection of Human Subjects. Every effort will be taken to protect the integrity and confidentiality of the subjects throughout their participation in the study.

Please contact me if you are interested in being a part of this research study or have any questions about the recruitment of volunteers for the research described above.

Sincerely,

Sylvia Stevens, APRN MS BC
202-296-9541

Recruiting Volunteers for a Study on the

Effects of Weight Loss Surgery

Have you had any method of weight loss surgery within the past 3 years?

Are you 18 to 65 years of age?

Are you conversant in English?

You may qualify to participate in new study about coping with the challenges of weight loss surgery.

- Time commitment approximately 45-60 minutes.
- All volunteers will be offered a \$35 gift card in appreciation for their participation in the study.
- Only anonymous demographic information will be obtained. No personal identifying data will be requested.
- All interviews will be audio recorded and later transcribed to a written record that will contain no identifying information about the subjects. All records will be held in secure files and destroyed at the end of the study.
- The study has been approved by the Catholic University of America Office of Sponsored Programs and Research Services Committee on the Protection of Human Subjects.
- Every effort will be taken to protect the integrity and confidentiality of the subjects.

Contact Sylvia Stevens, MS, APRN-BC

202-296-9541

56stevens@cardinalmail.cua.edu

Appendix C

Consent Form

Study Title: What is the experience of eating and dietary adherence challenges of adult post weight loss surgery patients?

Performance Site: The Catholic University of America, School of Nursing, Washington, DC.

Investigator: Sylvia Stevens, APRN MS BC

Contact information: 202-296-9541, 56stevens@cardinalmail.cua.edu

Purpose of study: To identify and understand the challenges to eating and dietary adherence of adult weight loss surgery patients in the postoperative period.

Benefits: The study will yield valuable information about weight loss surgery patients and the challenges to eating and dietary adherence in the postoperative period, and assist in providing advanced practice nurses working in surgical, primary care, and mental health nursing settings set guidelines for post weight loss surgery care.

Risks: The only risk is the inadvertent release of sensitive information from the survey or interview. Every effort will be made to maintain confidentiality and integrity of records. Files will be kept in secure storage cabinets to which only the investigator has access.

Right to refuse: Subjects may choose not to participate or to withdraw from the study at any time without penalty or loss of any benefit to which they might otherwise be entitled.

Privacy: Results of the study may be published, but no names or identifying information will be included in the publication.

Signatures:

regarding

The study has been discussed with me and all my questions have been answered. I may direct additional questions

the study specifics to the investigator. If I have further questions about subjects' rights or other concerns, I can contact

The Catholic University of America Office of Sponsored Programs and Research Services Committee on the Protection of Human Subjects. I agree to participate in the study described above and acknowledge the investigator's obligation to provide me with a signed copy of this consent form. I understand that I may withdraw my consent to participate in the study at any time.

I agree to have the interview of which I am a voluntary participant audio recorded and have been assured that this recording and all written transcriptions will be stored in secure file boxes with no identifying information stated on the recording or written on the documents.

I understand that I will be offered \$35 remuneration for my participation which will not be withheld should I not complete the interview process.

(Signature)

(Date)

(Witness)

(Date)

Appendix D

Data Collection Protocol

1. The participant will be greeted by the investigator and escorted to the designated meeting room or agreed upon location of the interview. A small table or designated section of a conference table will contain the consent forms, pens and a box of bottled water which participant will be offered.
2. The participant will be presented with the consent form (see Appendix A). After the consent form has been signed, the participant will complete the demographic data form (see Appendix C).
3. Consent and demographic forms will be placed into a document storage envelope that will be secured by the investigator.
4. Participant will be reminded that the interview will be audio recorded. The investigator will seat herself opposite the subject(s), turn on the recorder (placed on the conference table or small table near subject(s) and begin the interview with the following question:
 - a. Please tell me about what it's been like for you since you had WLS?
5. As subject(s) respond these proposed follow up prompts or questions may be asked:
 - a. Please tell me about any eating challenges you have faced since your WLS.
 - b. Please tell me about any challenges to sticking to the dietary restrictions you have faced since you WLS.
 - c. How do you handle challenges to eating or sticking to your dietary restrictions?
 - d. Have you had any guidance or counseling about challenges to eating or sticking to your dietary restrictions since your WLS?
6. Sufficient time between questions will be given to allow subject(s) to describe their experience. The investigator may veer from the proposed questions as the respondent(s)

raise issues that direct the interview into areas not currently anticipated.

7. Subject(s) will be requested to give process consent at anytime during the interview if they express any concern with the format of the interview or questions asked by the investigator.
8. With approximately 5 minutes remaining in the prearranged time frame of the interview (approximately 45-60 minutes for individual and 60-90 minutes for group) the subject(s) will be asked if they have any concluding comments to make or questions to ask about anything that has transpired during the interview.
9. The audio recording devise will be turned off and subject(s) will be given a gift card loaded with \$35, thanked for their participation, and escorted from the meeting room.
10. When subject(s) has taken leave, the investigator will make field notes about any impressions, observations, or process issues that occurred during the interview.
11. All recordings, consent forms and field notebooks will be secured in a locked file and the investigator will exit the room.

Appendix E

Demographic Data Collection Form

Date _____ Location of interview _____

A. Age _____

B. Gender _____ (1) Female

_____ (2) Male

C. Race _____ (1) African American

_____ (2) American Indian

_____ (3) Asian

_____ (4) Asian American

_____ (5) Hispanic

_____ (6) Other

D. Highest level of education completed _____

E. Occupation _____

F. Marital status _____ (1) Single

_____ (2) Married

_____ (3) Domestic Partner

_____ (4) Divorced

_____ (5) Widowed

G. Date of Weight loss surgery _____

H. Method of weight loss surgery ____ (1) Laparoscopic Gastric Banding

____ (2) Laparoscopic Roux-en-Y-Gastric Bypass

____ (3) Laparotomy Roux-en-Y-Gastric Bypass

____ (4) Other

I. Weight before surgery _____

J. Current weight _____

K. Co-morbidities (e.g. diabetes, hypertension, heart disease, bone and joint problems, urinary incontinence, depression)

Appendix F

Proposed Semi-structured Interview Questions

1. How have you been doing since you had weight loss surgery?
2. What was life like for you before you had weight loss surgery?
3. What was your view of weight loss surgery before you decided to have surgery?
4. What has it been like for you to follow the diet guidelines given to you by the surgery team?
5. How well are you following the diet plan given to you by the dietician?
6. Tell me about times when you have veered off the prescribed diet.
7. How did you get back on track with the diet after you veered off?
8. What are some of the reasons you were tempted to or actually cheated on the diet?
9. What were your thoughts and feelings at the time?
10. What is helpful to you to stay with the diet?
11. What is not helpful to you to stay with the diet?
12. What are some of the positive outcomes for you about having weight loss surgery?
13. What are some of the negative outcomes for you about having weight loss surgery?
14. Describe how your life is different now than before you had weight loss surgery?
15. How do you think that your life is different after having weight loss surgery than if you had continued to try various diets or other weight loss strategies?

16. Can you identify one or two things you do to keep yourself motivated to stay on the diet?
17. What advice, if any, do you have to those contemplating having weight loss surgery?

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