Gastric Bypass: A Bibliographic Essay

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Gastric bypass is a surgical procedure that changes the anatomy of the digestive system to promote weight loss in overweight people. According to Appleby (2006), approximately 55% of the United States population is overweight, and almost one in five is obese. There are many different treatment options for the obese person, which depend primarily on how overweight a person is and the overall health status of the person.

Because obesity is becoming an epidemic, I chose to research gastric bypass to become more familiar with the procedure. More importantly, I wanted to find out how successful gastric bypass surgery is for the obese patient. I have known a few people personally, and some not so personally, that have regained their weight after they had lost it. Why does this happen? The reasons for gaining weight are topics that most people do not discuss; it is a sensitive subject especially if you are overweight.

I began my search using the Ferris State University’s FLITE Library database CINAHL. I typed in the keywords gastric bypass and received 732 results. I narrowed my search by only listing articles within the last five years, and that search brought 242 results. Limiting my search to academic and periodicals did not change the results that much. I then tried to narrow my search by adding weight loss in the subject heading, which turned out to be more frustrating because that resulted in over 7000 hits. I narrowed my search even more by adding post-operative complications which gave me 14 results; a much more manageable number. I did find some useful articles written for the nursing professional.

I then tried my luck with PUBMED, another database through the FLITE Library. This database, in my opinion, was a little more difficult to use, as it was not as “user friendly”. I again used the keywords gastric bypass and received over 6000 results. I refined my search to nursing journals and received 99 results, not great, but a workable number. I found a few more articles that I thought that I could use for my essay. These were also written for the nursing professional.

By using the Health and Wellness Center database, and the same keywords, I obtained 2214 news sources, one video, 1009 magazine and journal articles, and nine books and fact sheets. I did find one book that I was interested in; unfortunately, it was not available.

Finally, I decided to try Academic One File. The keywords gastric bypass resulted in 966 results. I then clicked on the subdivisions and it broke my subject down into many different sub categories. Bingo! This is what I have been looking for. Each sub-category had different references that you can click on to find more information. I should have tried this first. By clicking on some of the articles in the sub-categories, it led me back to PUBMED. I found the Academic One File the easiest database to use, and it got me to the information I needed faster. After assessing the information that I gathered, I decided to divide my paper into four different sub-categories:

* Methods
* Health Aspects
* Complications and Side Effects
* Patient Outcomes

**METHODS**

After using the Academic One File database, and finding the different subdivisions of gastric bypass, I went to the Nursing Resource Center database and typed in gastric bypass. I noticed that this database also had sub-divisions, so I clicked on that and it led me to some general information on gastric bypass. This is where I discovered there are several different variations of gastric bypass surgery. According to Laberge, (2009), the most common of these is the Roux-en-Y (RNY) procedure. In this surgery, a pouch is created using the lesser curved side of the stomach, by stapling and banding it. The surgeon then attaches a Y-shaped piece of the intestine to the pouch, and the middle part of the small intestine. Food bypasses the first part of the small intestine or duodenum and continues to the rest of the small intestine and large intestine. This procedure is also performed laparoscopically. The patient does not have a long incision as with an open procedure, but two to three smaller incisions.

Laberge goes on to explain another type of surgery called the biliopancreatic diversion (BPD). This surgery bypasses an even longer portion of the small intestine, but creates a little bit bigger pouch for the stomach. The least invasive weight loss surgery is the lap-band and adjustable gastric band restrictive surgery. This procedure results in restricting the top part of the stomach by placing a saline filled bag in it. The rate of emptying slows; therefore, the patient eats less at a time. Laberge also talked about vertical banded gastroplasty (VBG) which is stapling the stomach The article also talked about the advantages and disadvantages of each procedure and the risks for each one. It was simple to read and the average person could easily understand it.

I found another article using the Nursing Resource Center database that strictly talked about VBG. Frey, (2009), explains that VBG is a surgical procedure in which the stomach is partitioned with and fitted with a plastic band to limit the amount of food the stomach can hold. This surgery can be done open or laparoscopically. The surgeon cuts out a “window” in the stomach just below the esophagus. He creates a pouch using a stapler and checks the size carefully. This pouch can only obtain approximately one tablespoon of food. The surgeon takes a band of non-stretchable plastic, places it through the window, and stitches it into place. The band holds the food in the stomach longer increasing satiety. Frey also discusses the risks of the procedure and the extensive testing that is done prior to the procedure. Again, this article was very simple to read and easy for the average person to understand.

I found an article through Academic One File that was available by interdisciplinary loan explaining in detail the RNY procedure. Furtado, (2010), considers the RNY procedure the “gold standard” of bariatric surgery. The article I obtained was very technical and not for the layperson. I liked this article because it showed a drawing of the procedure and I could visualize what the author was talking about. Furtado also discussed the complications and outcomes of the surgery and compared other gastric bypass surgeries to the RNY. This article is more for the medical professional. The drawing intrigued me, so I dug a little deeper in my research by accessing the Mayo Clinic web site. I typed gastric bypass in the search and it brought me to a basic page with explanations of the different gastric bypass surgeries they have to offer. The web site also had a tab for research that directed me to their database Pubmed.

I decided to try the database called Medline. I typed in gastric bypass and found a video link. OR Live, (2010), showed a panel of a nurse, doctor, and patient that had undergone the RNY procedure. The video showed the actual procedure. This was very interesting to me since I work in surgery. This could be beneficial for future patients to watch, if they do not get queasy looking at a person’s intestines. It could also be helpful for surgeons, nurses, or scrub technicians.

**HEALTH ASPECTS**

The most obvious reason for having gastric bypass surgery is obesity. Davidson, (2006), defines obesity as having a body mass index (BMI) measurement of 30 or higher; 40 or higher are considered severely obese. The Gale Virtual Reference Library was informative, but only gave basic information. It briefly went over the different types of gastric bypass surgery, preparation, and aftercare for the patient. For someone who wants detailed information, this is not it. In addition, according to Davidson*, (p. 2661-2663),* morbid obesity can result in many serious health problems including the risk of death. These problems can include hypertension, type II diabetes, increased risk of coronary disease, heart attack, hyperlipidemia and a higher prevalence of colon, prostate, endometrial and possible breast cancers.

The dangers of obesity are well- known as it is a contributing factor to the development of cardiovascular disease, type II diabetes, metabolic syndrome, obstructive sleep apnea, and some forms of cancer (Kushner, 2011). Kushner does not go in to detail about each of these risk factors, but explains that obesity has become an epidemic and will require collaborative effort from federal, state, and local government entities to help combat this growing epidemic. He gives references to other obesity related topics important to clinical practice, such as non-alcoholic fatty liver disease (NAFLD), treatment in obesity, complications from weight loss surgery, and nutritional complications after weight loss surgery.

Obstructive sleep apnea,(OSA), is the most important risk factor caused from obesity (Aguiar, et al, 2011). OSA is defined as recurrent episodes of partial or complete obstruction of the upper airway during sleep in the presence of ventilator effort, with a drop in oxy-hemoglobin saturation. The authors are conducting a study on the quality of life in morbidly obese patients related to pulmonary function through spirometry. They hypothesized that the weight loss from surgical intervention would reduce the impact of obesity on sleep quality, cardiovascular consequences, quality of life, and the cost of treatment. This document explained the study, how the subjects were chosen and what interventions were used. The subjects were monitored prior to their surgery, and for a year afterward. Since this article was written in 2011, the final results are not completed.

Buchwald,(2007), states, among the comorbid conditions of morbid obesity (type II diabetes, hypertension, OSA, coronary heart disease, strokes, back and lower extremity weight-bearing osteoarthritis, several forms of cancer, depression, etc.) hyperlipidemia or dyslipidemia is found in about 21% of the morbidly obese patients. A study was conducted in a rabbit and a pig to determine where cholesterol was absorbed. It was determined that cholesterol absorption is more a time factor than specific absorption sites in the ilium. Studies were then conducted on the outcome of partial ileal bypass and the concentration of cholesterol in plasma on humans. Statistics show there was a progressive decrease in cholesterol levels in the surgery group. Buchwald also states that patients benefited from resolved other health issues such as hypertension, type II diabetes, and OSA.

**Complications and Side Effects**

I found it overwhelming to select the topics for complications. All of the databases had numerous articles to choose. I decided to select one from CINAHL, Academic One File, and Pubmed by typing gastric bypass and nutrition in the search box.

As with all surgeries, there are risks of complications. Pouch enlargement, band slip band erosion, port-site infections, and breakage are some of the complications that can result from laparoscopic adjustable gastric banding (LAGB) (Birch, et.al, 2012). Birch explains each of these complications in detail, and the treatment for each. He concludes that LAGB is considered safe with a medium-term efficacy that is comparable to a RNY procedure. He also states it has a lower overall and major complication rate than RNY gastric bypass.

Dumping syndrome is a complication of RNY with reports of 50% to 75% of patients experiencing dumping following this particular surgery (Heinlein, 2009). There are different degrees of dumping syndrome through the first 12 to 18 months. A study was conducted on patients undergoing RNY to see if they obtained adequate education concerning the possibility of developing dumping syndrome. I was not interested in the study, but in the fact that dumping syndrome was indeed a complication or side effect of the surgery.

There is a high incidence of nutritional based complications that result from gastric bypass surgery. Constipation is another side effect due to the lack of fiber. In addition, suboptimal fluid intake can exacerbate the problem (Manchester, 2011). Manchester also talks about dumping syndrome; agreeing with Heinlein, that it is common after RNY. Patients can also experience nausea, cramping, diarrhea, lightheadedness, tachycardia, sweating, and flushing. Patients should undergo extensive nutritional education prior to their surgery. They need to be educated on dietary modification including avoidance of fatty foods and refined sugars (Manchester). This article was very informative in that Manchester explains what obesity is and the types of surgeries performed used to treat obesity. She explains the potential nutrient deficiencies and how the dietician can help with these deficiencies. In order to care for these patients effectively, nutrition practitioners must understand the types of surgery and their nutritional implications (Manchester).

Life threatening psychiatric complications associated with rapid weight loss and hyperemesis can occur after weight loss surgery (Jiang, 2006). Complications can vary and are thought to be related to the patients’ vulnerability of the CNS to nutritional decline or the length of time until evaluation and treatment. This article gives an example of a patient that developed acute psychosis 52 days after gastric bypass surgery. According to Jiang, psychotic manifestations have occurred in individuals who have undergone gastric bypass surgery, gastrectomy, a hunger strike, and a crash diet for weight loss. It was debated whether this was Wernicke’s encephalopathy because of the similar symptoms that were manifested. Thiamine deficiency is a primary cause of Wernicke’s encephalopathy and has been alleged to be the major cause of psychosis after gastric bypass surgery. Nonetheless, nutritional deficiency is a complication of gastric bypass surgery.

Patient Outcomes

In researching patient outcomes from bypass surgery, I was more interested in the patients that regain weight after their surgery and why. Academic One File did not yield any results of my search. I also tried the Health and Wellness database without any luck. I decided to try Pubmed again and found just what I was looking for.

Weight regain is an important concern after weight loss surgery, with rates ranging from 46% to 63%.after the second year of surgery. Diabetes, hyperlipidemia, and hypertension were resolved or improved in more than 70% of patients. (Freire, 2012). Causes of such high incidences are not well known but are thought to be related to a higher BMI prior to surgery, psychological disorders, dilation of the gastric pouch, sedentary life style, and “morphological-functional adaptation”. This article involves a study that addresses the lifestyle habits of patients who underwent RNY from 1998 to 2008 and to identify factors that would predict weight loss and regain. The results of the study concluded that satisfactory weight loss after RNY occurred independently on the quality of diet, age, physical exercise and socioeconomic status. However, five years post operatively patients did not maintain their weight loss. It was determined that the regain of weight was due to poor diet quality, sedentary lifestyle, and lack of follow up with a nutritional counselor.

Using the database CINAHL, I was able to find more information on weight regain after RNY surgery. This article, written two years earlier, states that up to 30% of patients regain their weight after 18 months to 2 years after surgery. There was also evidence of health improvements after the initial weight loss. Difficulty coping with the return of food cravings and challenging eating behaviors after a period of relative relief following surgery are what participants disclosed in a study conducted by an urban health care center in Virginia. One possible cause of this weight regain is the finding that daily caloric intake increases over time (Stewart et al, 2010). It was determined that more studies needed to be done on the physiological and psychological mechanisms that occur with disturbed eating patterns. The group was limited with only 14 participants. Both Stewart and Freire agree that reinforcement of nutritional education of gastric bypass needs to be enforced after surgery to improve surgical outcomes and optimize patient health.

O’Brien (2009), states the short-term weight loss achieved by Roux-en-Y (RNY) gastric bypass is greater than that achieved by laparoscopic adjustable gastric banding. The aim of obesity therapy is to achieve sustainable weight loss, yet the published data on bariatric surgery is dominated by short-term literature. Further research is needed for long term data with greater than 10 years follow up.

Most individuals are able to lose significant weight in the short term even without surgery. A challenge for most medical weight loss programs is their inability to maintain sustained weight loss (O’Brien). This article explains a study that was conducted by Puzziferri and colleagues. His findings showed that weight loss produced by RNY was more rapid, greater and more consistent than that produced by laparoscopic adjustable gastric banding (LAGB) during the first 2 years after surgery. Reasons for these results are due to RNY not being an adjustable technique. By contrast, LAGB is adjustable. Band placement achieves satiety; therefore, providing a physiological effect to decrease hunger. The major success comes from patient follow-up which includes good education, support, and timely band adjustments. This technique requires more time with a period of greater than 2 years.

Gastric bypass is becoming more and more popular with the increase in obesity. I was able to find much information on the subject and at times became overwhelmed on how much information there was. It was difficult to narrow down such a broad topic. Academic One File was the most helpful database in my opinion. It was the easiest to use and divided the main subject into subcategories. This is what helped me determine the most popular sub-topics. I was disappointed to find that there is not much information on weight regain after bypass surgery, as this is why I wanted to write on this topic. . This could be because there has not been enough studies done or because the ones doing the research are the ones performing the surgeries and that would tarnish the success rate. I was able to find a lot of information on the benefits of having gastric bypass, but was unsuccessful on the reasons not to have it done.

I found the nutritional aspects very interesting. I could have broadened my research to early prevention. Child obesity is a great problem in today’s society. I could also have broadened my subject to the psychological aspects of obesity. What causes obesity? Is it psychological issues? Is it something genetic? Overall, I found this topic to be of great interest.

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Cindy,  
  
In approach, tone and content, your bibliographic essay on gastric bypass is excellent. The introduction effectively establishes the general importance of the topic and your interests in it. From there, you do a superb job of providing an overview of your research process. The thesis you use firmly establishes the goal of this project and prepares the audience well for what is to come.   
  
You really deliver on the sources you cover, creating a good overview of each source with the appropriate source-directed commentary that makes this essay stand out as an effective guide to this research. I particularly like the way you integrate an overview of this topic with your profiles of the sources that address the salient issues on this topic. I thought the variety of work you chose for this project was exemplary. Finally, you cite and handle these sources in a natural and professional way.  
  
The final document preparation is well done. You’ve done a good job with editing. APA format is well executed in this essay. Your references are excellent.   
  
I think you’ve earned a strong “A” of 197/200 points on this assignment. Way to go! Thank you for the hard work and care that is evident project.  
  
Katherine Harris

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