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Bariatric Surgery and the Impacts on Occupations: A Qualitative Study

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Approval Page

This Independent Study, submitted by Emily Schlosser and Annie Van Erem in partial fulfillment of the requirement for the Degree of Master's of Occupational Therapy from the University of North Dakota, has been read by the Faculty Advisor under whom the work has been done and is hereby approved.

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Faculty Advisor

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Date

PERMISSION

Title: Bariatric Surgery and the Impacts on Occupations: A Qualitative Study

Department: Occupational Therapy

Degree: Master's of Occupational Therapy

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ABSTRACT

Purpose: The aim of this study was to explore the lived experiences of individuals who had undergone bariatric surgery and the impact weight loss has on occupations.

Methodology: A comprehensive literature review was conducted on the affects of obesity, bariatric surgery and the impacts on occupational performance. Based on the findings of the literature review, a qualitative research study using a phenomenological approach was completed. The Model of Human Occupation (MOHO) served as a guide in developing the interview questions and data analysis process. Four female participants who have undergone bariatric surgery were recruited using a purposive sampling method. The participants were interviewed twice using semi-structured interviews. Data was then coded and organized into categories. Themes that emerged from the process illustrated participants' experiences with weight loss surgery and the impact of weight loss on occupational engagement.

Results: The data collected throughout the interview process was organized into four different categories including the history of gaining and losing weight, occupational performance, habituation, and volition. Two assertions emerged from the various themes and categories. The first assertion was the overall quality of life was improved for individuals who had undergone bariatric surgery. The second assertion that emerged was that as individuals lose weight they need to transition into new roles, develop new habits/routines, and implement new coping strategies. The challenges associated with these changes were counteracted by the increased energy levels and productivity in occupational engagement.

Conclusions: The results of this study indicate that occupational therapy can assist individuals who have undergone bariatric surgery transition into new roles; develop new habits, routines and coping strategies; and provide education on energy conservation techniques that facilitate increased occupational engagement. Although positive surgery outcomes have been reported, approximately 20% of the patients are unsuccessful with losing weight or maintaining weight loss due to challenges associated with implementing healthy lifestyle changes (Sarwer, Wadden & Favricatore, 2005). Future research is suggested to explore the effectiveness of occupational therapy's involvement in a comprehensive bariatric surgical program. The research could help define occupational therapy's role in assisting individuals who have undergone bariatric surgery implement postoperative lifestyle changes.

CHAPTER I

INTRODUCTION

Obesity is a rising epidemic in the United States, as the prevalence among adults is approximately 33.8 % (Flegal, Carroll, Ogden, & Curtin, 2010). The Center for Disease Control and Prevention (CDC) characterized the western culture as "obesogenic", meaning that its environment promotes increased food intake, unhealthy foods, and lack of physical activity (CDC, 2010).

Obesity can drastically inhibit performance in daily occupations. Occupations are defined as, "Daily activities that reflect cultural values, provides structure to living, and meaning to individuals; these activities meet human needs for self care, enjoyment, and participation in society," (Crepeau, Cohn, & Schell, 2003, p. 1031). Occupational therapists assist clients with engagement in meaningful occupations in order to live to life to its fullest. Eight areas of occupation are identified within the occupational therapy profession including work; play; sleep; activities of daily living (ADLs) such as eating, bathing, dressing etc.; instrumental activities of daily living (IADLs) such as cooking, cleaning, money management etc.; social participation; lesiure; and education (American Occupational Therapy Association [AOTA], 2008). When obesity inhibits performance in any area of occupation that is meaningful to an individual, the need for occupational therapy arises in order to address the barriers that limit occupational engagement.

When health and occupational performance are threatened, and other weight loss methods have been unsuccessful, individuals may consider treatment options such

as bariatric surgeries. Bariatric is defined as, "the practice of medicine concerning individuals who are significanly overweight" (Cook & Polgar, 2008, p. 546). As the prevalence of obesity rises among Americans, the popularity of bariatric surgeries also increases. In 2004, 121,055 bariatric surgeries were performed in comparison to the 13,386 performed in 1998 (Zhao & Encinosa, 2007). There are a number of different bariatric surgeries available to individuals who meet the criteria of having a body mass index (BMI) of 40 or higher (Forhan, 2008). Many research studies have been conducted on the physical impacts of bariatric surgery; however, limited qualitative research has been published pertaining to the impacts on performance in everyday occupations and quality of life. Understanding how people's lives are impacted by obesity and bariatric surgery can help occupational therapists recognize how to better meet the needs of individuals who are obese and experiencing new occupational demands related to weight gain and/or weight loss.

The student researchers conducted a qualitative research study to explore weight loss following bariatric surgery and the impacts on daily occupations. Four participants were recruited to participate in the study. The study consisted of two, semistructured interviews per participant. Data was collected and analyzed throughout the time frame of three months. It was expected that the results of this study would include the physical and psychosocial factors that accompany weight loss. It was also expected that a significant difference between occupational participation and quality of life prior to and post bariatric surgery would be expressed through the lived experiences of the four participants involved.

A comprehensive review of literature pertaining to obesity, bariatric surgeries, and how occupations and other aspects of life are affected by weight gain/loss is found in Chapter II. The methodology used is described in Chapter III, this includes a detailed explanation of the process of the qualitative study conducted. Chapter IV presents the results of the data analysis of the indepth interviews completed with the four participants of the study. Chapter V provides a summary of this independent study and implications for occupational therapy practice and future recommendations. Finally, the Appendices includes the interview schedules, the participant consent form, a chart of the study's findings, and Institutional Review Board (IRB) approval page.

CHAPTER II

LITERATURE REVIEW

Demographics of Obesity

Obesity is a worldwide epidemic that affects men and women alike. In 2004, World Health Organization (WHO) estimated that nearly 1.6 billion adults over the age of 15 were overweight and at least 400 million were obese (World Health Organization [WHO], 2010). A study conducted by Hedley et al. (2004), found that men over the age of 20 had a higher prevalence of obesity than women. Additionally, 70% of the United States seniors 60 years or older were obese (Hedley et al., 2004). Among the four United States census regions, there is a greater prevalence of obesity for both African Americans and Caucasians in the South and Midwest than in the West and Northeast. Among Hispanics, a smaller prevalence was observed in the Northeast than in the other three regions (CDC, 2009).

Definition of Obesity

Overweight and obesity are terms used to describe ranges of weight that are greater than what is considered healthy for one's height. These ranges of weight have been shown to increase the likelihood of particular diseases and other health complications (CDC, 2011). For adults, the ranges are determined by using height and weight to gauge the BMI. The WHO defines overweight as a BMI equal to or more than 25, and obesity as a BMI equal to or more than 30. These ranges provide a standard for individual assessment; however, there is evidence that risk of chronic disease increases with a BMI of 21 or higher. Numerous physical complications and chronic diseases such

as cardiovascular disease, diabetes mellitus type II, musculoskeletal disorders, and some cancers accompany weight gain (WHO, 2010).

The National Heart, Lung, and Blood Institute/North American Association for the Study of Obesity committee recommends using the waist circumference of 40 inches for men and 35 inches for women to define central obesity. Increasingly, research shows that waist circumference or central obesity is a better predictor of obesity-related diseases than overall obesity assessed by using BMI (Wang, Rimm, Stampfer, Willett, & Hu, 2005; Zhu et al., 2005).

With the rising prevalence of obesity throughout the last decade, the healthcare costs of obesity financed by Medicare and Medicaid have risen as well. In 1998, roughly half of 78.5 billion dollars of obesity related medical costs were covered by Medicare and Medicaid (Finkelstein, Trogdon, Cohen, & Dietz, 2009). In 2006, obesity was responsible for almost 40 billion dollars of increased medical spending. Seven billion dollars was also attributed to Medicare prescription drug costs (Finkelstein et al., 2009).

Worldwide increases in obesity are attributable to many factors including: a shift in diet towards foods that are high in fat and sugar and a trend towards decreased physical activity (WHO, 2010). Although the primary cause of obesity is an energy imbalance between caloric intake and caloric expenditure, obesity is also highly attributable to genetic factors with the heritability of obesity being equivalent to that of height (Allison et al., 1996). The following sections include literature relating to cultural and societal biases; preventions and treatment; psychological impacts of obesity; occupational therapy; effect of obesity on occupations; and theoretical implementation.

Cultural and Societal Biases

Although obesity appears to be a growing epidemic in the United States, Western society continues to place an overwhelming emphasis on ultra thin body physiques. Weight loss supplements, workout programs, and weight loss reality television shows are extremely common among current media. Societal pressures have lead many individuals throughout the United States to report dissatisfaction with their bodies without fitting diagnostic criteria for being overweight, obese, or having eating disorders (Padgett & Biro, 2003). Research studies have found many cross-cultural comparisons related to body image. Padgett and Biro (2003) found that Caucasian women reported body dissatisfaction at an average, or lower BMI level, whereas African-American women did not report considerable levels of body dissatisfaction until they had reached an overweight BMI status of 25 and above. According to the Los Angeles Times, the average American female weighs 169.2 pounds, with an average dress size of 14 (Vesilind, 2009).

Studies have shown that overweight and obese individuals often internalize social stigmas, hold many of the same negative associations about being overweight as average weight counterparts, and rarely portray preference for other overweight individuals (Wang, Brownell, & Wadden, 2004). Judgments made on individuals who are obese appear to be more critical in men, younger people versus the elderly, and in the upper class as compared to the lower class (Meyer & Tuchelt-Gallwitz, 1968). Many research studies have been conducted to gather society's views and biases on obesity. Surveys have shown that individuals who are obese are viewed to be less qualified for

jobs (Pingitore, Dugoni, Tindale, & Spring, 1994; Roehling, 1999), less likable as patients (Allon, 1982; Hebl & Xu, 2001), and less desirable as interaction partners (Fallon, 1990; Miller, Rothblum, Felicio, & Brand, 1995). Employees who are obese are often viewed as less worthy of recognition (Decker, 1987), less punctual, less enthusiastic, ill-mannered, and less trustworthy than are average-weight employees (Zemanek, McIntyre, & Zemanek, 1998). Among the stereotypes listed above, Allison, Basile and Yuker (1991), have found that laziness and stupidity are society's two most common stereotypes pertaining to the obese population.

Some consider the stigma of obesity to be one of the most noxious (Allon, 1982; Crandall, 1994) because those who are obese are often perceived to be entirely responsible for their condition. The obese population is vulnerable to discrimination that society unfortunately views as more socially acceptable. Most people are only frowned upon for making negative comments about the obese population as compared to an ethnic minority (Allon, 1982; Crandall, 1994).

The social stigmas related to obesity can result in mental and emotional difficulties such as social withdrawal, isolation, depression, low self-esteem, and altered self-concept and can often lead people to seek professional help. However, many patients may face discrimination from their medical providers as well as the public (Foster et al., 2003). Many primary care physicians view obesity as largely a behavioral problem and share the general public's negative stereotypes about the personal attributes of people who are obese. Practitioners are realistic about treatment outcomes but view obesity treatment as less effective than treatment of most other

chronic conditions. Of 5,000 primary care physicians surveyed, more than 50% of physicians viewed obese patients as awkward, unattractive, ugly, and noncompliant (Foster et al., 2003).

Prevention and Treatment

For a number of factors, including societal pressures and medical complications, individuals who are obese are seeking out professional help. There are a variety of different treatment options available to help individuals lose and/or maintain a healthy weight including lifestyle modifications, pharmaceutical interventions, and bariatric surgeries.

Lifestyle modification is the least invasive treatment approach and is aimed at making healthier life choices, finding a healthy balance between caloric intake and energy expenditure, and motivation. Lifestyle modifications are encouraged for individuals who are overweight and are trying to prevent obesity, or for individuals who are obese and are trying to prevent further weight gain or comorbidities. Typically, the lifestyle modification approach is not an effective long-term treatment for obese patients, instead it is more appropriate for patients who have a BMI of 25 to 30 (Forhan, 2008).

The increase in obesity combined with societal pressures of having an ultra thin body physique has lead to a boom in weight loss pharmaceutical products; however, many of these medications can be harmful to the body. According to Greenway and Bray (2010), there are two drugs that are Food and Drug Administration (FDA) approved as long-term obesity treatments. Some of these pharmaceutical options are known for

having side effects such as gastrointestinal complications, elevated blood pressure and increased heart rate. Phentermine is also a FDA approved drug; however, it is recommended for short-term use only due to its addictive nature. Many other medications are on the market that assist in weight loss; however, are not exclusively designed to target weight loss (Greenway & Bray, 2010). There are also many vitamin and herbal supplements, such as fiber and green tea, which have been utilized to suppress appetite. The pharmaceutical approach is intended to assist weight loss along with exercise and diet, and is recommended for individuals with a BMI of 27 to 30 (Forhan, 2008).

Bariatric surgeries have become more common in the United States in last two decades. In 2004, 121,055 surgeries were performed in the United States, as compared to the 13,386 performed in 1998 (Zhao & Encinosa, 2007). Patients are not considered for surgical interventions until a BMI of 40 or greater has been reached, or a BMI of 35 if obesity related comorbidities are also present (Schouten, Wiryasaputra, Van Dielen, Van Gemert, & Greve, 2010). Comorbidities are defined as, "concurrent presence of two or more medically diagnosed diseases in the same individual, with the diagnosis of each contributing disease based on established, widely recognized criteria" (Fried, Ferrucci, Darer, Williamson, & Anderson, 2004, p. 258). Thorough preoperative nutritional education, physical, and psychological testing is completed prior to surgery to ensure candidates will be able to tolerate both the physical and mental recovery of the surgery and the lifestyle changes that accompany it (Andersen et al., 2010).

Roux-en-Y gastric bypass (RYGB) and gastric restrictive operations, such as laparoscopic adjustable gastric banding, are the two major types of bariatric surgeries performed in the United States (Kashyap, Bhatt, & Schauer, 2010). Costs and insurance coverage of weight loss surgeries vary depending on the surgeon and type of procedure chosen. Every surgery is accompanied with possible risks. Some of the possible drawbacks and complications of surgery include staple line disruptions, incisional hernias, pouch dilation, and anterior slippage (Schouten et al., 2010). Patient compliance and routine follow-up are important to identify and correct these complications.

Nutritional management is a major lifestyle change post surgery for patients. Consumption of adequate fluids, up to 60 grams of protein per day, vitamins and minerals are required in order for patients to receive the nutritional intake they need postoperatively. Food must be thoroughly chewed in order to prevent obstruction in the reduced gastrointestinal system. People can often experience severe pain, nausea, vomiting, and reflux with caloric overconsumption. Individuals can also experience episode of weakness, dehydration, etc. (Furtado, 2010).

Postoperative recovery can be long and painful; however, weight loss is apparent within days after surgery. Research shows that typically patients lose 50 to 60 % of their excess body weight within the first two years post surgery (Sarwer, Wadden, & Fabricatore, 2005). The same study also indicates that 20 % of patients do not lose a significant amount of weight due to non-compliance with postoperative diets and exercise routines.

Numerous studies have found a positive relationship between increased BMI and physical limitations, bodily pain, and fatigue (Fontaine, Cheskin, & Barofsky, 1996; Hsu, et al., 2002; Larsson, Karlsson, & Sullivan, 2002). According to Discovery Health, every pound of weight lost reduces three pounds of pressure on weight bearing joints such as knees and ankles. For example if a patient lost 100 pounds after surgery, the pressure on the joints will have been reduced by 300 pounds (Discovery Health, 2010).

A recent study was conducted to explore the long-term effects of bariatric surgery. Among the participants hypertension, type II diabetes mellitus (T2DM), and joint complications were the most prevalent conditions. Each of these obesity related comorbidities was reduced by approximately 50% or more in most participants after two years of undergoing surgery (Schouten et al., 2010). The physical health related benefits are a major selling point for patients when deciding whether to undergo bariatric surgery; however, there are also various psychological benefits that accompany weight loss.

Psychological Impacts of Obesity

A qualitative study by Ogden, Clementi, and Aylwin (2006) described the impact of surgery in phases of initial impact and adjustment. Although the initial stage post surgery was characterized by a sense of shock, the majority of patients described how they adjusted to the physical limitations as a result of the operation and developed a new sense of control over both their weight and eating. This new sense of control took two forms for the participants. For some, it took the form of an external control that felt as a relief from the responsibility to continue battling with weight. For many, however,

this reflected an internal sense of control resulting in improved mental health such as confidence, body image, and quality of life (Ogden et al., 2006).

Many studies have found that weight loss surgery leads to improvement in socioeconomic performance, psychosocial functioning, and improved experiences in social acceptance after weight loss (Bull, Engels, Engelsmann, & Bloom, 1983; Larsen & Torgersen, 1989). On the other hand, some studies found that the patients' initial postoperative improvement in psychosocial functioning had largely regressed three years after weight loss surgery, even among those with good weight and health outcomes (Kolotkin, Crosby, Gress, Hunt, & Adams, 2009; Waters et al., 1991). Research suggests that new social skills are often required to cope with the increased social acceptance (Mathus-Vliegen, 2007).

A qualitative study found that bariatric surgery leads to positive as well as tension generating changes. The changes included increased feelings of vulnerability, changes in personal values, viewing surgery as failure as participants were unable to lose weight on their own, and the extent to which weight determines perceptions of self. Other changes included new issues pertaining to appearance, changes in friendships, changes in marital dynamics, establishing new eating behaviors, implementing coping techniques that did not involve food, and developing new social skills. Finally, many individuals had conflicted emotions regarding new reactions from others and conflicted reactions to discrimination against other obese people (Bocchieri, Meana, & Fisher, 2002). The positive changes noted within the Bocchieri et al. qualitative study included increased ability to perform activities, improved medical

conditions, reduced pain, ability to envision a longer life, improved job performance, and enhanced parenting ability. (Bocchieri et al., 2002).

There are multiple psychological factors that accompany weight gain. Studies that have been conducted suggest that 20% to 60% of patients who undergo bariatric surgery suffer from Axis I disorders preoperatively such as depression and anxiety (Black, Goldstein, & Mason, 1992; Glinski, Wetzler, & Goodman, 2001). Anxiety disorders, including generalized anxiety disorder and social phobia, have been diagnosed in up to 48% of candidates (Black et al., 2002; Hsu et al., 2002).

Numerous studies have also suggested that patients experience an improvement in psychosocial status postoperatively (Adami et al., 1994; Dixon, Dixon, & O'Brien, 2003; Dymek, le Grange, Neven, & Alverdy, 2001; Vallis, Butler, & Perey, 2001). Significant improvements in depressive symptoms have been found to increase up to four years postoperatively (Dixon et al., 2003). For example, of 41% of patients who had an Axis I psychiatric diagnosis preoperatively, only 22% were found to have a diagnosis, based on a clinical interview, at three years postoperatively (Powers, Rosemurgy, Boyd, & Perez, 1997).

Occupational Therapy

Occupational therapy is a profession focused on helping individuals participate in the everyday occupations that hold meaning to them. There are eight areas of occupation as defined by the American Occupational Therapy Association (AOTA). These areas of occupation include: activities of daily living including dressing, eating, showing/bathing, and sexual activity; instrumental activities of daily living including care

of others, care of pets, child rearing, meal preparation, and shopping; rest and sleep; education; work; play; leisure; and social participation (American Occupational Therapy Association [AOTA], 2008). Obesity is a barrier to occupational performance for many people. The plethora of research studies reviewed provide evidence that excessive weight gain has the potential to impact each area of occupation. Occupational therapists can assist individuals who are obese by assessing their needs, identifying barriers, setting goals collaboratively with the individual, and developing interventions that will motivate and assist in successful participation in desired occupations (Clark, Reingold, & Salles-Jordan, 2007).

Occupational therapists are trained in a variety of aspects related to obesity including evaluation and interventions pertaining to psychosocial, physical, environmental, spiritual, and cultural factors. Practitioners provide interventions that are client-centered, meaningful, and effective. These interventions address how patients' participation in the eight areas of occupation as well as, roles, patterns, habits and routines contribute to obesity (AOTA, 2008). The following section contains literature that explains how obesity affects each area of occupation.

Effect of Obesity on Occupations

For many patients who undergo bariatric surgery, improved psychological and social functioning can be as important as the than pounds on a scale. Researchers surveyed a sample of patients undergoing gastric bypass surgery pre-operatively, two weeks post-operatively, and six months post-operatively. Along with significant weight loss, patients reported an increase in physical functioning, general health, social

functioning, and emotional health, and a decrease in pain two weeks post surgery. A dramatic reduction in depression and increase in self-esteem was seen (Dymek et al., 2001).

Education

Women who are obese are less likely to aspire to further education, and are more dissatisfied with careers/studies (Ball, Crawford, & Kenardy, 2004). Data shows that obesity is correlated with lower education levels. A study found that higher education levels decreased the probability of obesity, hypertension, and diabetes (Cutler, Glaeser, & Shapiro, 2003). Moreover, the prevalence of obesity in women was nearly doubled among those with less than secondary education than in those who graduated from post-secondary (Ward, Tarasuk, & Mendelson, 2007). Research was also conducted with age groups of 18 to 34 years, 35 to 54 years, and 55 to 74 years found that obesity was significantly more prevalent with lower education; these trends were similar for all three age groups (Hall et al., 2003).

Social Participation

Previous research has indicated that stigma associated with obesity contributes to decreased social participation for those who are obese (Puhl & Brownell, 2001). Additionally, women who are obese are more likely to be dissatisfied with family relationships, partner relationships, and social activities (Ball et al., 2004). As a result of weight loss, improved physical health, and more frequent activity, patients report greater self-confidence when interacting with others (Rand, Kowalske, & Kuldau, 1984). In a retrospective study of 30 randomly chosen gastric bypass patients, those who lost

weight experienced improved relations with others, and as a result, became more socially active than they had been pre-surgically (Hall, Horne, O'Brien, & Watts, 1983).

It has been reported that ten of 14 married patients of gastric bypass surgery report increased participation in social activities (Rand et al., 1984). As early as six months after surgery, researchers found that patients had significantly reduced social interaction difficulties (Kincey, Neve, Soulsby, & Taylor, 1996). It was discovered that 102 post-operative bariatric surgery patients had increased relations with the opposite sex and social networks in general (Isacsson, Frederiksen, Nilsson, & Hedenbro, 2002).

Sexual Activity

Research has indicated that obesity impacts sexual activity. In a study conducted by Bajos, Wellings, Laborde, and Morneau (2010), obese women and men were less likely than normal weight women and men to report having a sexual partner in the past 12 months. An additional study aimed to investigate the relationship between body weight and sexual function in women. The female sexual function index (FSFI) was administered to obese and normal weight women. Of the six sexual function parameters, desire and pain did not correlate with BMI, while arousal, lubrication, orgasm and satisfaction did. The FSFI score was significantly lower in overweight women as compared with normal weight women indicating that obesity affects several aspects of sexuality (Exposito et al. 2007). Research also shows that individuals who undergo bariatric surgery rate themselves as more attractive after surgery. Individuals are also seen as more attractive by their partners (Camps, Zervos, Goode & Rosemurgy, 1996).

Prior to surgery, patients report that excess weight is a physical barrier and depletes energy during sexual relations (Marshall & Neill, 1977). After bariatric surgery, couples commonly notice changes in sexual relationships due to changes in physical appearance, physical comfort during sex, feelings of attractiveness, and stamina (Kinzl, Trefalt, & Biebl, 2001; Ray, Nickels, Sayeed, & Sax, 2003). A series of studies examined the marriages of 54 patients pre-surgery, one year and three years post-surgery. One year after the surgery, 52% reported their marriages to have improved and 61% reported their sex life to be better (Rand et al., 1982; Rand et al., 1984).

Work/Productivity

A recent study evaluated work absence, work productivity, and disruption of time spent at work, in social participation, and with family life among individuals of differing BMIs. Work and daily activity impairment increased significantly when comparing people who are normal weight to those who are obese (Rodbard, Fox, & Grandy, 2009). It has also been found that people who are 45 years and older, are obese, and have physically demanding jobs are more likely to become injured at work (Chau, Bhattacherjee, & Kunar, 2009). It has been found that obesity is also associated with missing work (Bungum, Satterwhite, Jackson, & Morrow, 2003). Research also suggests that sick leave, injuries occurring in the work place, and use of disability coverage are attributable to obesity (Schmier, Jones, & Halpern, 2006).

Theoretical Implementation

The Model of Human Occupation (MOHO) was used to serve as the theoretical basis for the study. MOHO was chosen because the focus of the model is to explore

how occupations are motivated, patterned, and performed. This focus supports the exploration of the human experience of weight loss and its effects on occupational engagement. According to a recent survey, MOHO is the most common occupational therapy model utilized by therapists throughout the United States and internationally (Lee, Taylor, Kielhofner & Fisher, 2008).

The three components of MOHO are volition, habituation, and occupational performance. Volition refers to the motivation required to initiate participation in an occupation. Habituation is the way occupations are organized into habits, roles, and routines. Finally, occupational performance refers to an individual's ability to perform tasks (Kielhofner, 2009).

Each component is equally important when considering how occupations are impacted by obesity and the process of weight loss. For example, an individual's lifestyle can be impacted by excessive weight gain or weight loss in areas including eating habits, daily exercise routines, transitioning into different roles and changes in the way occupations are performed. An individual's motivation to participate in certain occupations that were once valued may be impacted by the physical and psychological factors that accompany obesity. A holistic approach, which is emphasized within MOHO, was utilized throughout the process of the study to gain an understanding of the human experience of weight loss.

Obesity and bariatric surgery have major physical and psychosocial impacts on daily occupations; however, the following study found that occupational therapists lack first hand information on the needs of people who are obese. In Canada, 830

occupational therapists were surveyed in a study regarding occupational therapists and their knowledge and experience with obesity. Eighty-three percent of therapist reported working with patients were obese, less than 50% of the therapists believed that occupational therapists understand the full needs of people who are obese, and many responded that occupational therapists need to be better informed on the issues of obesity due its rising prevalence (Forhan, Garroway, & MacDonald, 2008).

Many quantitative studies have been conducted on the impacts of bariatric surgery; however, limited qualitative research has been published pertaining to the impacts of obesity and weight loss via bariatric surgery on performance in everyday occupations and quality of life. Based on this literature review, a qualitative study was conducted. The purpose of this study was to capture the participants' experiences of how weight loss following bariatric surgery impacts occupational participation, role competency, habits and routines and emotional health. The next chapter provides the methodological sequence of events that were carried out through the study process.

CHAPTER III

METHODOLOGY

Two occupational therapy students conducted a qualitative study on the effects of weight loss following bariatric surgery on occupations using the theoretical guidance of Model of Human Occupation (MOHO). This chapter describes the methodological process in which the research was conducted. The sequence of the research process is explained in detail along with the design, participant selection, data collection, and data analysis.

Research Design

A qualitative research study was designed using a phenomenological approach. The focus of phenomenological research is to obtain information of the lived experiences through the personal stories of individuals. This design was intended to capture the descriptive experiences of individuals who have struggled with obesity and their journey through weight loss, while exploring the impacts both have had on the participants' everyday occupations(Creswell, 1998).

Researchers conducted an extensive review of literature to explore how obesity and bariatric surgery impact volition, habituation, and occupational performance. Based on the key findings from current research, the American Occupational Therapy Association Framework, and the Model of Human Occupation, the researchers developed questions for semi-structured interviews. Open ended questions were developed to evoke detailed responses that illustrated the meaning of participants' experiences.

The researchers obtained Institutional Review Board approval by completing the training test modules, completing the University of North Dakota Human Subjects Review Form, creating the participant consent form, and submitting the interview schedule. After obtaining approval, the research process was initiated.

Four female participants, meeting inclusion criteria, were recruited through the use of non-randomized, purposive, and snowball sampling techniques. Subjects were referred to the student researchers by non-relative acquaintances through word-of-mouth communication. The following describes the inclusion criteria: participants who are six months to two years post operative bariatric surgery, between the ages of 45 to 65, and have held residency in the Upper Midwest for at least five years prior to and following surgery. Residency was included to ensure commonalities among occupations related to geographical/cultural opportunity. Exclusion criteria for the participants were atypical complications after surgery and relation to the student researchers.

Prior to beginning the initial interviews, participants were asked to review and sign an informed consent. Data collection consisted of two, one-hour audio recorded interviews with each participant. Participants chose the locations of the interviews to ensure they were in a comfortable environment. To ensure confidentiality, participants were given pseudonyms during the data analysis process. The interviews were conducted two weeks apart, which allowed participants to process the initial interview and time for the researchers to review transcriptions and identify areas that needed clarification.

The interviews were transcribed verbatim and thoroughly analyzed. Interview data was then coded by the researchers. Codes were then transitioned into themes, which were then grouped into four categories. In order to qualify data as a theme, three out of the four participants had to express similar experiences. Finally, the assertions were synthesized. These codes, categories, themes, assertions emerged throughout the interviews and gave meaning to the participants' experiences with bariatric surgery and its effects on occupations.

Trustworthiness

Trustworthiness of the study was attained through multiple methods. Triangulation was achieved by using two investigators to collect data, confirm results, and corroborate the data collected with a review of previous literature. Member checking was utilized to ensure credibility of the participants' experiences. After the data was analyzed, the participants were provided with the synthesized results to confirm reliability of the information. Rich, thick description was another method utilized to guarantee transferability of the information. Debriefing was accomplished through a weekly external check of the research process by the study advisor. Finally, the researchers clarified personal biases through reflexive journaling to ensure that prejudgments and thoughts were processed as the study unfolded.

Tools for Data Analysis

The interviews were audio recorded to ensure accuracy of the participants responses. After the interviews were transcribed the tapes were destroyed by the student researchers. Until that point, the tapes were kept in the security of the

researchers' possession to ensure anonymity of participants. Using the transcriptions, the student researchers organized and evaluated data into codes, themes, categories and assertions. The following chapter presents the study results.

CHAPTER IV

RESULTS

Chapter VI presents the four female participants' experience of weight loss following bariatric surgery. The four participants shared a number of common experiences which were synthesized into four categories guided by the Model of Human Occupation (MOHO). Pseudonyms were assigned to provide the readers with a means of relating to each participant's personal experience while maintaining confidentiality. The demographic information of each of participant is presented in the following section. An asterisk (*) was utilized in place of proper nouns or indicates a name change to protect the confidentiality of the participants and their family and friends. A summary of the demographic information is found in Table 1.

Participant one is identified as *Brenda. She explains herself with the following statements,

> I was born October 20th, 1950. . .I moved to ND and I married *Lou May 17th 1975. I'm 60 years old . . . I work at a high school as the assistant athletic director. . .I have three kids, two sons and a daughter. I have nine grandkids. . .They are a big part of my life.

Participant two is identified as *Olivia. She describes herself through the following statements,

> My name is *Olivia. I am a stay at home mom . . .*Dan and I got married in 1990 . . .I have a step daughter, she is almost 18, and a stepson who is a sophomore. And then I have my own. . . .a little girl, *Claire who is seven. Dan actually legally adopted her. I haven't worked for. . .I think it's been two years. I was working as a secretary/receptionist. . .

Participant three is identified as Patty. Patty is a single female who is approximately 55 years old. She explains her job title in the following statement, "I'm a hairdresser. I went to beauty school when I was 25 so I have been doing it for quite a long time now." Participant Four is identified as Yvette,

> I'm 51 . . . .after high school I went to business school and the tech for interior design. . .I was contacted by the park district they wanted to know if I'd be interested in a recreation coordinator position. . .so I've been here for about seven years. . .I have two daughters, one is 27, she was married in September. They have no children. Then I have a daughter who is 25. She is single and has a little girl who is two years old. She is just the highlight of my life.

Table 1
Demographics

Participant	Sex	Age	Job	Marital status	Race	# of Children	Education
*Brenda	Female	60	Athletic director assistant	Married	Caucasian	3	High school
*Olivia	Female	46	Home maker	Married	Caucasian	3	2 year degree
*Patty	Female	55	Cosmetologist	Single	Caucasian	-	2 year degree
*Yvette	Female	54	Park and recreation coordinator	Married	Caucasian	2	2 year degree

Data was coded and then sorted into categories. The categories include the process of weight loss, volition, habituation, and occupational performance. Each category contains the lived experiences, told by the participants through direct quotations. See the Appendix for a flow chart of the study's codes, themes, categories and assertions.

History of Gaining and Losing Weight

Before understanding how bariatric surgery affected the participants' volition, habituation, and occupational performance, the researchers found it important to first

explore each participant's perception of how weight influenced their lives. According to the data obtained, the researchers found that all participants stated they have struggled with weight related issues their entire lives. Each participant experienced lifelong struggles with weight that influenced self identity and self esteem. Patty stated, "I have struggled with weight pretty much my whole life. I remember my mom bought me a girdle when I was in the third grade." Yvette explained her history with weight struggles that stemmed from a young age in the following statement,

> I was always the tallest and the chubbiest and always in the back row at school. I was in the first or second grade when they brought a scale into our classroom, put it at the front, and weighed everyone and announced it to the class. And I weighed 105. That just sticks in my head so clearly. . .I'll never forget it. No one ever meant to hurt me but I was just always targeted as the fat kid. I was always self-conscious. I don't remember much in middle school but in high school I was a [size] 12 or 13 and I just thought I was a monster.

Olivia had a similar comment about her self-perception when she was young stating,

> In high school I remember always thinking I was fat. I was a little overweight but to me I was always *huge* [emphasis added] and that was just the way it was in my mind . . .I don't ever remember thinking I wasn't fat. I remember seeing pictures of myself and I didn't look that fat but I felt it.

The participants' self-identities were impacted by the negative memories they had from past experiences reporting that some of the humiliating childhood experiences will never be forgotten.

The family history of obesity was explored among the participants. Three of the four participants reported having family members who are overweight or have comorbidities related to excessive weight, which lead to the theme that generational similarities with obesity are commonly seen. Brenda stated, "In my family my mom,

both my grandmas . . . .they were all large women and I just knew I was going to be a large woman." Patty stated, "My sister and I both always had weight issues" which suggests that there are commonalities with weight among siblings. Yvette also commented,

> I am the youngest of four children, all brothers. And um, all of us have struggled with our weight since we were very young . . . .My mom is obsessed with weight. She's always been about a size 16. She always felt like she was a fatty.

Olivia also reported having a family history of obesity related comorbidities, stating, "My biological dad died when I was about eight years old. He died when he was 32 because he was a real bad diabetic. . . .my family, they were all bad diabetics." Overall, many generational similarities related to obesity were noted among the four participants.

Participants were asked to describe their previous attempts at weight loss in regards to the different diets, pharmaceutical products, exercise routines, and other weight loss methods. Yvette expanded on her many attempts at weight loss by through the following statement,

> It's funny, when I had my surgery my neighbor said to me, 'Yvette, you've been dieting since you were three' . . . and she was right. I was on the grapefruit diet. I've been to diet center, Jenny Craig, L.A. Weight Loss…I lost 80 pounds on there and then gained it back . . . .Nutrisystem, Weight Watchers. I've been on a local diet that this lady has. I have done the Phen Phen thing . . .I did some things in high school that my friend talked me into and I found out later that I was actually doing speed. I had another friend that tried to talk me into throwing up. That's how much I wanted the weight off. I was successful on Jenny Craig but it was just so expensive. I know I'm missing some but that kind of tells you what I've been through. I've always been able to lose but not keep it off.

Various treatment approaches have been trialed by all four participants. The other participants also reported trying many different commercial weight loss programs/diets,

prescriptions, different exercise routines. In some cases, extreme measures were taken in order to find successful aids for weight loss, including illegal drugs. Olivia reported, "I even tried hypnosis, it was a joke." Bariatric surgery was seen a last resort for the participants. All four participants exhausted all other options and were determined to lose the weight by exploring other treatment options. The responses indicate that these participants did not obtain successful long-term weight loss through the different lifestyle modifications or pharmaceuticals trialed.

The participants accepted the idea of bariatric surgery after the other weight loss methods were found to be unsuccessful. A number of factors are considered before having bariatric surgery including BMI, psychological factors, physical health factors, educational training, and insurance approval. The participants explain their process of qualifying for surgery through the following statements. Yvette recalled her process stating,

> I went to my doctor and they told me that I needed to see my surgeon . . . he said my BMI needed to be a little higher so I ate and then he was mad because I ate too much . . .I was denied at Christmas. Then he had me do a sleep apnea test, I failed it and that's what got me through [approved for surgery] . . . Then a psych evaluation . . . I basically told the lady what she needed to hear but looking back it's like wow. It's so smart that they have patients see a psychologist because weight affects everything, not just physically but emotionally.

Yvette's experience of having to gain weight to meet the BMI qualification suggests that she was willing to take extreme measures to qualify for surgery. The other participants had similar experiences with the qualification process, including having a BMI of 40 or higher, meetings with dieticians and psychologist, sleep apnea testing, etc. The

qualifications for surgery are particular. Brenda commented on her attitudes and beliefs about the qualification process by stating,

> I think the stipulations [for surgery] should be pretty steep because I think anybody, skinny or fat, could say 'well I think I need surgery'. I think you know anybody that has tried so many different weight loss programs and it just hasn't worked . . . if you're over 75 pounds of what you should be and other programs haven't worked you should qualify for something like that, but you have to prove yourself.

The information found throughout the literature review and the previous responses indicate that the qualification process for bariatric surgery is extensive and particular to ensure the appropriateness of the surgery for each individual (Andersen et al., 2010). The similar qualifications for surgery identified by the participants included a BMI of 40, nutritional education, and psychological evaluations.

Participants were asked to explain their process of weight loss after the surgery, including weight lost, recovery time, side effects of surgery, etc. Brenda stated, "The surgery went great. I had no problems. I lost 78 pounds . . . As far as anxiety or anything, I had none. I was just so excited I had it done." Olivia explained her experience by stating,

> I think I was 299 pounds at one point. Let's see, I was 250 pounds when I had my surgery and now I weigh 160. In total, I think I had lost 100-115 pounds . . . I was actually really sick right away and I think, it was mostly because I wasn't chewing my food thoroughly. I would throw up a lot. . . It's a bad deal but I would do it all over again because I am so happy with my results.

Three of the four participants lost 75 pounds or more within the first six to nine months post surgery. All participants reported a common experience with the side effect of vomiting due to overconsumption of food. Two of the four participants

reported hair loss as a side effect from surgery due to protein insufficiency. Although these side effects were experienced the participants still were satisfied with their results, and bariatric surgery was seen as a success.

Occupational Performance

Each participant shared that occupational performance was affected throughout the process of bariatric surgery. It was found that areas of occupation were impacted by energy level, productivity and self-esteem. Increased energy levels were valued as a means to improve performance in occupations. Energy level correlated with many aspects of occupational performance. For example, participants reported increasing engagement in leisure activities, social participation, and IADLs among others. Patty explained her prior energy level, "I couldn't do Wal-Mart and Target in the same day because I would just be to dang tired." Yvette commented on her energy level after surgery, "I had all this new energy and I wanted to go out and see people because I felt so good about me."

Prior to surgery, three of the four participants stated socialization was impacted as a result of their weight. Olivia reported, "I didn't feel like going out because I wanted to lay around." After surgery, three of the four participants responded that they had an increase in social participation. Yvette stated,

> My number one [change] would be socializing that really made a big difference. If someone would ask to go to a Sioux hockey game, I'd be like 'woo hoo I'm on board let's go!'

Participants reported having more energy to perform IADLs such as home management tasks. Olivia commented about her personal experiences with changes in

home management that were impacted by her increased energy stating, “I have more energy so I’m more likely to keep my house a little cleaner now . . . I really like to mow my lawn now that I have the energy.”

Changes in productivity, efficiency, and the ease of engaging in occupations was a theme that also emerged. Overall, participants felt more productive at work, home, and in the community. Participants identified that they were able to complete tasks more efficiently and with more ease. Yvette stated, “I was also slower and not as efficient, you know, getting down on the floor to look for something under the bed was always a pain trying to get back up again.” Patty’s quote confirms this as well by stating, “I’m just more efficient in everything . . . like bringing things into the salon and carrying groceries into the house. Going up and down stairs to do laundry is a lot easier too.” Some felt as though their increased productivity lead to more time in their daily schedules. Brenda stated, “My days seem longer like I have all this time I didn’t have before. I feel like I’m actually doing something with myself now.”

Participants felt more efficient with home management. Yvette explains her experience with the change in productivity in the following quote,

> I can get up in the morning and do what I need to do like clean the house and go shopping whereas before I would get up and drink coffee all day and that’s all I would accomplish. I just wasn’t active enough to clean or anything.

This sense of efficiency extended to performing the essential functions of their jobs. Brenda stated, “I can walk down halls of the school now and I feel good at the end of the day.” Patty noted, “I feel more efficient at work” as she reported she was able to move about her salon more efficiently and perform tasks in a timely manner.

Some participants reported tasks as becoming easier. Olivia describes how she has become more productive with home management.

> A lot of things are easier now. Cleaning, laundry – I just am more active and feel like I can get them done whereas before I would become overwhelmed and didn't want to do it . . . Going up and down stairs really used to suck for me when I would do laundry, but now my knees don't hurt when I'm running up and down them constantly.

Patty describes her productivity and its effect on her occupational performance by stating, "In terms of my daily routine, I know that I move faster . . . and in turn expend less energy and get things done in a more efficient time."

Prior to surgery three of the four participants ceased engagement in a number of occupations including leisure, socialization, and shopping. Participants reported an increase in occupational engagement leads to an improvement in self-esteem. After surgery, participants spoke of re-engagement in occupations, which was indicated to directly correlate with an improvement in self esteem.

Leisure activities were ceased due to weight and how it affected their self-consciousness. Brenda stated, "I used to play ball and bowl, but I had to give that up…it was mainly because of the weight." Yvette provided a memory of self-consciousness when stated that she stopped participating in her leisure activity of canoeing because "It was like 'I gotta to get into a little canoe and people are gonna look at me!'" Olivia spoke of ceasing activities with her child. "I would never get into a swimsuit and swim with my daughter and I don't have a problem with that anymore." Patty also reported that she gave up meaningful leisure activities, "I felt very awkward doing things so it limited some of the things that I could do like the decorative painting."

All four participants reported an increase in social participation as a result of increased self-esteem. Patty stated, “When you see someone that you haven’t seen for a long time I feel better interacting with them.” She also reported engaging in more intimate relationships as a result of her increased self-esteem. “I am e-mailing back and forth with a guy . . .I know that I wouldn’t have done that before, I would’ve been too self-conscious.” Others stated they feel more confident in social situations at work as well. Yvette reported, “Before, I would sit in the corner and not pipe up very often, now, the confidence is huge. When I walk into a meeting I command attention.” Brenda and Olivia reported that shopping was also positively impacted weight loss and self-esteem. Brenda stated,

> I used to hate shopping, but now I love it. It’s a lot of fun now. Before it was like how can you find clothes because they’re all made for skinny people. Once I lost all my weight I bought a shirt that when I wore it I was thinking, ‘oh gosh what if I see a high school girl in this shirt.’

Olivia provided her experience with improved self-confidence, as she was finally able to feel “normal” while shopping,

> The big thing for me is shopping. I love to be able to go to the normal size women sections. For the longest time I had to shop at Wal-Mart, but it’s just so fun to go shopping in normal stores rather than plus size sections.

These comments suggest that occupational engagement is not only impacted by physical improvements, but also through improved emotional health such as self-esteem.

Habituation

Many lifestyle and habit changes are required after bariatric surgery. Weight loss affected the participants’ eating habits, the way daily routines are changed due to

the impacts on energy levels, and changes within role performances and relationships.

Changing eating habits is a challenging aspect of recovery. Olivia commented on the biggest change since surgery stating,

> Well the obvious is food. Giving up on all of the yummy junk food . . . Oh I used to love potato chips, the Lays Originals . . . Eating less, eating slower . . . I was just used to eating fast. I feel miserable when I eat too fast . . . When we go out to eat now I have to carry around the little card that my doctor gave me to allow me to order off the kids or senior sizes.

Patty also found it difficult to change her eating habits stating,

> They give you very strict guidelines of what foods to eat because your stomach has changed so much . . . .they warn you to chew everything to the nth degree and if you don't, it sticks right here [points to chest]. . . It's become so much of a habit that I don't even notice . . . You kind of have to go down the path and learn what works for your body. It's a learning process . . . .

Simple habits such as chewing food, drinking slowly, reducing portion sizes are all changes that were addressed in the previous responses. These changes can impact social opportunities such as dining out at restaurants. Three of the four participants commented on how alcohol and soda affect them differently after surgery. Olivia's statement represents these similarities stating,

> I stopped drinking soda . . . For a while I was big into Sunkist pop. I probably drank two to three 20 oz bottles a day . . . The carbonation just kills you . . . And alcohol . . . .I really cut down on that. *Dan would come home and typically have a beer or two after work, and I'd usually have a couple with him. Not anymore. I will still have a glass of wine here and there and drink with friend once and a while but it's not nearly what it used to be. He always says, 'I miss my drinking partner'. It definitely affects me differently.

Not only does weight loss affect eating habits, it also affects how individuals structure daily schedules and perform certain tasks. Daily routines changed after

surgery among the participants. The participants were asked to describe a typical day before and after surgery. Increased activity levels impact daily routines. Brenda described her typical day prior to surgery by stating,

> [Before surgery] I wouldn't necessarily eat breakfast . . . I'd munch all morning until dinner [lunch]. I'd probably have three cans of pop. At dinner [lunch] I'd eat a regular meal and after I'd sit and have three to four more cans of pop and munch. Supper, we'd come home and cook supper, and probably have two to three more cans of pop and munch until bed . . . Now [after surgery] I go to work at about six . . . I really am on the go at work a lot now. Then I come home and instead of lying down on the couch, you're maybe doing laundry or cleaning a spot of the house you didn't get done the day before . . . We were stopping at the gym about every other day…And then when we are at the lake we are outside until bedtime. There is no going inside. We are either working on the yard or out on the pontoon, whereas before you'd come home, take your shoes off, put your pjs on, hit the couch and you wouldn't move . . . So now we are always busy.

The increase in energy and activity levels made a difference in the way all participants structure their days. The other participants reported habits that were included into their daily routines. Olivia reported, ". . . . I weigh in every morning. That is the first thing I do when we get up. *Dan leaves the scale out for me every day so it's a joint habit."

All four participants added this habit into their daily routines after surgery as a source of motivation to maintain a healthy weight and a healthy lifestyle. Exercising was another habits/routine that was implemented into many of the participant's days to help maintain a healthy lifestyle. Yvette stated,

> I had never gone to the gym [before surgery] . . . I started exercising to the point where I lived at the gym. Oh, it was past the point of obsession. It got to a point where I was there for two or more hours a day. I thought I could keep up with the younger kids at the gym and lift as much as them but then I ended up hurting my shoulder really bad so I haven't been to

> the gym for about a year. I just saw so much success and my body changed. I remember it was such a high knowing you looked good and you feel good. . . .

The participants reported having lifestyles that are more active after bariatric surgery. Three of the four participants also described new habits/routines such as weighing themselves daily and exercising to the point of injury have become newfound obsessions.

An individual's identity is often defined through the roles in which they engage. Weight loss can lead to changes within role performance and relationships. The participants reported changes within the different roles that they partake in including marriage, friendship, parenting, and sibling relationships. Olivia stated the following in regards to changes in their marital roles, "I guess we never had major issues with sex. It was good before, but yeah. I guess it is a lot better now just because I feel better about myself." Yvette validated Olivia's statement by reporting, "After surgery I felt like my marriage got stronger. I was more willing to do bedroom stuff. I was more willing to be a partner. I wasn't self-conscious when he touched me [anymore]. . ."

Brenda's husband had bariatric surgery as well. In the following statement, she reflects on the challenges she faced when he had the surgery, and the insurance company had denied her approval.

> Our marriage is great. Especially now that we have both gone through this [surgery] . . . kind of a new bond. I was struggling a little when he had the surgery and I got denied. That was actually really difficult . . . I had a hard time. He was losing so much weight and people would compliment him and I'd sit there like a whale. But then I got the surgery and we are great.

Role performance in regards to parenting changed for Brenda, Olivia and Yvette. Some participants reported feeling more involved as a parent and able to engage in activities with their children. Olivia indicated that her role as a mother has changed in a variety of ways,

> Being more active for my daughter . . . Doing things with her and having energy around my home . . . *Ruby and I do a lot more physical kind of activities now. We are always out playing in the pool during the summer. And we try and tell her, 'Mommy is getting skinnier so she can play with you more.' It's cute to hear her explain that to other people when the comment on my weight loss . . . I just have more energy to play with her instead of sitting on the couch watching Disney movies. I think my oldest stepdaughter enjoys shopping with me a bit more now too. Obviously, since I can buy clothes in the normal size sections now. We have a little more in common now.

Brenda and Yvette both reported feelings of guilt towards their children and grandchildren, who also struggle with weight. Brenda stated,

> I think my kids loved me the same before and after surgery . . . I do wish people wouldn't compliment me as much as they in front of *Lisa [daughter] and *Tina [granddaughter]. I just feel like I'm rubbing it in their face. Poor *Tina, it really is hard for me to watch her go through all of this since she is in high school. Kids are so mean…I know they are happy for me but I just can't help but to feel bad. I don't want them to go through this, not at all.

Yvette supported Brenda's statement by adding,

> And you know, both of my girls are both a little on the heavy side. For them it's going to be a battle too . . .But as a mother I wish my girls were thin, but it's not my life . . . .I know how they feel.

Weight loss had both positive and negative effects on relationships. Yvette commented on how her social relationships have improved after surgery stating, "I've made my relationships stronger because I do feel more confident about calling up my friend and asking 'how's your dad doing?' . . . It's definitely strengthened my

relationships." Other participants have reported a decrease in friendships because of jealousy issues. As illustrated by Olivia's,

> Actually, my sister, who is nine years younger than me . . . she was always skinnier than me. She has always been my best friend . . . She has young kids so still has some of that baby weight on but is by no means really big. But now that I'm thinner I think it's a little harder on her, maybe some jealousy, I don't know. So anyway, I try not to talk about it as much with her because I feel like maybe I'm rubbing it in her face a little . . . I feel like that is one topic I try not to talk about with her because I know she is going through the weight loss thing right now herself after her babies.

Olivia also stated that she had problems with a few of her friends in terms of jealousy stating,

> I had a friend who had surgery a month before me and I felt like she was trying to scare me out of it. . . She had mentioned to me about having a boob job and a tummy tuck. But *Dan and I had been talking about doing it for a long time before she mentioned it to me. But I went and had it and she got mad and thought I was just trying to outdo her. And I think she is upset that I lost more than her . . . It might be a jealousy thing, but I don't know . . . We aren't even friends anymore. She defriended me on Facebook.

Brenda had a similar experience with a friendship stating,

> I can say that after I lost a lot of weight some of my friends and I stopped hanging out as much. I'm not sure if it was because I am smaller than them now . . . For example, one of my friends in particular won't ask me to go shopping her as much. It used to be, 'oh let's go dress shopping' while she would try on size 10s and I would be closer to 18-22s, and now I'm smaller than she is . . . One of my friends has shied away from me a bit now after I've lost my weight . . . Well I'm the smaller one now and I think she is a bit jealous. It's too bad because I was just hoping she would be happy for me. That's been difficult for me.

These statements imply that weight loss can have negative effects on roles and relationships due to high levels of jealousy among family members, friends, etc.

Participants explained that they had some concerns about how they might change after

they had the surgery in term of their personality; however, none felt like they had changed drastically except their confidence levels. Overall, the data suggests that weight loss through bariatric surgery can have a major impact on an individual's habituation including habits, routines, and roles.

Volition

Prior to surgery participants discussed a lack of motivation to change unhealthy lifestyles. The theme that arose was that motivation was a factor in maintaining a healthy lifestyle. Brenda commented, "The couch was my best friend," in regards to lack of motivation to exercise. Three of the four participants stated weighing themselves daily was a source of motivation to maintain a healthy lifestyle after surgery. When speaking of weighing herself daily Patty stated,

> I think it just gives me a sense of 'I did it – it was a good accomplishment from the day before' feeling. And then too, it gives me a mental attitude to keep the ball rolling to lose more . . .it's like I'm competing with the scale 'you're not always going to win, scale.' Weighing myself just sets me up for the day and I don't me I freak out if I go up . . . it's more of a 'I have to get serious about me weight today.'

Participants also utilized positive self-affirmations for motivation to maintain her healthy eating habits. Yvette motivates herself by affirming, ". . . .nothing tastes as good as skinny feels" when she wants to eat something unhealthy.

Three of four participants had commonalities in that they were motivated to keep weight off because they feared gaining weight back. Olivia stated, "I am terrified of gaining the weight back. I hear all the time about people who gained it all back. I didn't go through all of this to gain this back. That's why I weigh in every morning." Brenda stated, "I never want to be heavy. And one thing people throw in your face is that 'oh

you can still gain that weight back . . . surgery is not a guarantee, you still have to work to keep you weight down."

Emotional health was improved in regards to improvement in self-confidence, decrease in anxiety, improvement in self-image, and implementation of healthier coping strategies. Participants experienced an improvement in overall emotional health. While discussing stress and coping, all participants stated prior to surgery, they utilized food to cope with stress. Brenda stated, "When I was nervous, I could sit and eat three or four sandwiches and drink a six pack of pop in one hour."

After surgery, all four participants stated they had developed new coping skills to handle stress. Patty reported using food as a coping strategy prior to surgery. When asked about developing new coping skills she stated,

> Number one, I try to find things that are better for me. You know, if you're going to eat it make sure it's something that's wise. Like cookies, instead of a getting a big bag of Oreos I go and get one of those mini bags . . . just because I've had gastric bypass doesn't mean that I'm never going to eat a cookie again.

Overall participants spoke of coping with stress by replacing eating with other healthy activities such as biking or crafts. In contrast, one Brenda stated, "I release my emotions now by crying rather than eat three sandwiches and a bag of chips."

Olivia and Yvette replied that their overall stress has been reduced as a result of surgery. Olivia stated, "I guess my stress level has been really nonexistent since surgery. I don't really snack the way I used to but I also don't stress out at much as I used to now that I think about it." This statement suggests that a heavier weight may result in higher stress levels.

Commonalities were found in regards to the participants' emotional health. Participants had similar experiences with their quality of life prior to surgery in regards to self-confidence, anxiety, and self-image. Patty recalled, "I was just in a downward spiral and I just wasn't healthy physically or emotionally . . . . you feel like you stick out in a crowd and not for good reasons…I was honestly a little bit depressed. Yvette commented,

> I wasn't happy with myself and I wasn't in control . . . .even when I weighed 300 pounds people would tell me 'oh you look so good' and I would say 'no I don't have you looked at me? I know you're trying to be nice but look at me, I'm gross.'

After the surgery, all participants reported an improvement in body image and self-confidence. This is evidenced by Olivia who stated, "I love having my picture taken now to look at myself and see how I've changed. . . I feel like I have never looked better or hotter." Yvette stated,

> I definitely had more confidence after I lost the weight. I wanted people to see me. I wanted them to say 'wow you look good' and when people would say 'my God look at you, you look like a million bucks', I actually felt it.

There were also commonalities with improved emotional health pertaining to better outlooks on life and satisfaction with the surgery. Brenda stated,

> I feel good about myself. I feel like I want to go up town, go to work. I feel like I look good, I feel good. I'm not embarrassed anymore like I was before…I get up in the morning and it's like, 'it's going to be a great day' . . . I feel good about life. I love it.

Participants perceived that societal views of obesity had a negative impact on emotional health. Patty provided her experiences,

> With society so critical of people, you do feel so out of place in terms of what society thinks you're supposed to look like . . . think a lot of times people get this strange idea that if you're not even smart enough to eat right and not be fat, you must be pretty dumb . . . .

Brenda provided her opinion on society's view of obesity stating,

> I feel sorry for the younger generations; I think that is where a lot of girls are anorexic now days. And I think they need to look at weight in a different light, rather than seeing all of these skinny models. I really don't think that's healthy. Society throws that in your face a lot, being skinny.

Individuals who had undergone bariatric surgery were more empathetic towards those who are obese. Participants made empathetic statements about people struggling with their weight because they were able to identify that weight problems are not always a result of unhealthy lifestyles. Olivia stated, "I just look at heavy people now and I'm like 'oh my god I was there.' I feel bad for them. It's so sad because there is so much that can be done for people now days." Yvette also responded, "When I see people who are really overweight I just think why don't you get it checked out and do something because it's miserable to be that huge."

Three participants explained that they felt food became an addictive substance to them. Yvette stated, "I believe it's an addiction; the more you eat the more you want . . . people crave it. For me I think about food constantly." Others suggest that genetics contributed to obesity, Olivia stated, "I feel like obesity can be so easily prevented, but at the same time it can't. Sometimes you are just dealt that card you know in your blood lines."

It was commonly recommended that others struggling with weight undergo bariatric surgery due to the positive outcomes experienced by the participants. Two

participants explained that utilizing surgery is an aid to assist weight loss; it is crucial to implement lifestyle changes. Olivia's stated,

> If you can't do it on your own, which I was obviously unable to do, look into the gastric [surgery] . . . that tool to help you get going on your weight loss. It's a big change with eating, but it's definitely worth it . . . I think people really need to know though that it is just a tool, you have to do a whole lot to maintain that weight. It's not the answer alone.

Yvette also advised others,

> It's [surgery] just a tool and so many people think it's an answer to their problems, and it's not . . . it's up to me to continue to lose weight. I think people think it's an easy fix and it's not it's still a struggle for a lot of people.

These findings suggest that that participants were satisfied with their results and would strongly recommend others who are struggling with weight to consider bariatric surgery.

In conclusion, all participants reported positive outcomes with bariatric surgeries; however, some challenges were noted throughout the process. Similar changes were experienced with occupational performance, habituation, volition, and the history of gaining and losing weight. Two assertions emerged from the data collected. The first assertion was the overall quality of life was improved for individuals who had undergone bariatric surgery. The second assertion that emerged was that as individuals lose weight they need to transition into new roles, develop new habits/routines, and implement new coping strategies. The challenges associated with these changes were counteracted by increased energy levels and productivity in occupational engagement.

CHAPTER V

SUMMARY

This chapter presents a summary of the information found in this study, the study limitations, how the information relates to occupational therapy practice, and recommendations for future research. Weight loss through bariatric surgery has many impacts on occupational performance. Many research studies have been conducted on the physical impacts of bariatric surgery; however, limited qualitative research has been published pertaining to the impacts on performance in everyday occupations and quality of life. The information gained through lived experiences of individuals who have undergone bariatric surgery may help to define occupational therapy's role with this population.

The lived experiences of four female participants following bariatric surgery were explored and analyzed through a qualitative research study using a phenomenological approach. The Model of Human Occupation (MOHO) served as a guide in developing the interview questions and data analysis process. The data collected was organized into codes, themes, four categories, and two assertions. Three categories that emerged were facilitated by MOHO and included how weight loss impacted the areas of habituation, occupational performance, and volition. The final category titled the process of weight loss included the participants' histories with weight loss and other weight related issues.

The reoccurring themes throughout the data analysis included increased quality of life; improved energy levels; increased levels of productivity; changes made with

habits and routines; changes in role performance and relationships; and improved emotional health. These themes lead to the study's assertions. The first assertion is that the overall quality of life was improved for individuals who had undergone bariatric surgery. The second assertion that emerged was as individuals experience weight loss they transition into different roles; develop new habits, routines, and coping strategies; and adjust to increased energy levels and productivity in occupational engagement.

The study is limited by the small sample size. Due to the small sample size a level of saturation was difficult to reach. The homogeneous population focused only on the experiences of women living in the Upper Midwest. The inclusion criteria limited the exploration of the participants' experiences with weight loss beyond two years post surgery.

The results of this study indicate that occupational therapy can assist individuals who have undergone bariatric surgery transition into new roles; develop new habits, routines and coping strategies; and provide education on energy conservation techniques that facilitate increased occupational engagement. Although positive surgery outcomes have been reported, approximately 20% of the patients are unsuccessful with losing weight or maintaining weight loss due to challenges associated with implementing healthy lifestyle changes (Sarwer, Wadden, & Favricatore, 2005). Future research is suggested to explore the effectiveness of occupational therapy's involvement in a comprehensive bariatric surgical program. The research could help define occupational therapy's role in assisting individuals who have undergone bariatric surgery implement postoperative lifestyle changes.

Appendix A

Interview Questions

Bariatric Surgery and the impacts on Occupations: A Qualitative Study
Interview Questions

Interview 1 Questions

Please tell me a little bit about yourself.

-Age, employment, roles, where you grew up, education, etc.

Please explain your history with weight related issues.

-Weight gain/loss?

-When did you start experiencing problems with weight?

-What kind of diet methods have you tried, and what as worked?

Please describe what a typical day was like prior to surgery.

- What were your roles?
- How did your weight affect your ability to complete daily occupations?

CARD SORT:

Literature shows that weight loss affects all areas of a person's life. Please rate the areas in your life that were affected by your weight loss prior to surgery from most affected to least affected: Hobbies/Leisure Activities, Work or School, Home Management & Caring for family, Spending time with family/friends & attending social events, Personal hygiene, Sleep.

Please rate your physical health prior to weight loss surgery on a scale of 1-10. (1 being poor, 10 being the best).

-Did you experience any of the following: blood pressure, cholesterol, joint pain, breathing difficulties/shortness of breath?

Please rate your emotional health prior to surgery on scale of 1-10 (1 being poor, 10 being the best). Please give me a story that will illustrate your rating.

- Did you experience any issues with self-esteem, relationships, depression, anxiety, self- blame, self-consciousness?

Please explain your views on societal stigmas related to obesity.

- Did societal stigmas have any effect on your decision to have surgery? If so please explain.

What was your motivation to have weight loss surgery?

What was the process of qualification for the surgery?

What other options did you explore before having Gastric Bypass?

Pharmaceuticals, exercise, lifestyle modifications?

Did you have to gain or lose weight to qualify?

Interview 2 Questions

Begin interview by reviewing/clarifying the responses to the previous interview and address any questions or concerns the participant may have.

Can you explain your recovery process in a timeline format?

-Elaborate on how much weight did you lose, emotions you were experiencing, after 1 week, 1 month, 3 months, 6 months, 1 year?

-When did you plateau?

Please describe a typical day after surgery.

-What do u do with extra time

Please explain your current physical health after the weight loss surgery.

-Have there been noticeable changes in blood pressure, cholesterol, joint pain, shortness of breath?

Please explain your current emotional health after the weight loss surgery.

-Self-esteem, depression, anxiety

Card Sort

Literature shows that weight loss affects all areas of a person's life. Please rate the areas of your life that were impacted by your weight loss surgery from most affected to least affected: Hobbies/Leisure Activities, Work or School, Home Management & Caring for family, Spending time with family/friends & attending social events, Personal hygiene, Sleep.

- Please explain how it has affected each area.

How has weight loss affected your relationships and roles?

-Marriage, Friendships, Role as parent/grand parent

Some research suggests that some individuals need to develop or enhance their social skills in order to deal with increased levels of social participation. Can you relate to this statement, if so how?

Do you feel you are respected more or treated differently by others after your surgery?

-In what ways?

What are you beliefs about obesity?

- Have your beliefs changed as a result of your surgery?

Some research suggests that it was difficult for individuals to implement non dietary means of coping with emotions. Does this statement apply to your previous coping strategies?

-If so how did you deal with stressors?

What kind of lifestyle changes – positive and negative – did you have to make after your weight loss surgery?

-Portion sizes, diets changes, exercise routines, alcohol use.

What is your advice to individuals experiencing weight issues?

-Would you recommend weight loss surgery?

What has been the most beneficial aspect of surgery?

What has been the most difficult aspect of surgery?

What has been the most drastic change over all?

How would you explain your quality of life now as compared to before surgery?

Appendix B

Informed Consent

Informed Consent

TITLE:	**Weight loss surgery and the impact on daily occupations.**
PROJECT RESEARCHERS:	**Emily Schlosser, OTS, Annie Van Erem, OTS Janet Jedlicka, PhD.**
PHONE #:	**701-777-2209**
DEPARTMENT:	**University of North Dakota Occupational Therapy**

STATEMENT OF RESEARCH

A person who is to participate in the research must give his or her informed consent to such participation. This consent must be based on an understanding of the nature and risks of the research. This document provides information that is important for this understanding. Research projects include only subjects who choose to take part. Please take your time in making your decision as to whether to participate. If you have questions at any time, please ask.

WHAT IS THE PURPOSE OF THIS STUDY?

You are invited to participate in a research study on how weight loss after weight loss surgery has impacted your "occupations", or everyday activities. You have been asked to participate because you have recently undergone weight loss surgery. The purpose of this research study is to gain an understanding of the personal experiences of weight loss after weight loss surgery through personal interviews. It is our assumption that weight loss following weight loss surgery has a positive impact on your ability to engage in meaningful occupations and your overall quality of life. We will be studying how weight loss has impacted different areas in your life such as work, leisure activities, relationships, physical health, mental health, social participation, etc. in order to help the profession of occupational therapy better understand how weight loss impacts our client's experiences.

HOW MANY PEOPLE WILL PARTICIPATE?

Approximately 4-6 people will take part in this study through the Occupational Therapy Department at the University of North Dakota.

HOW LONG WILL I BE IN THIS STUDY?

Your participation in the study will last for four weeks. You will need to meet with the researcher two times at a place of your choosing to complete two separate interviews. Each visit will take about one hour.

WHAT WILL HAPPEN DURING THIS STUDY?

You will meet with a researcher to complete two interviews. The interviews will be held at a quiet, distraction free location of your choosing and will take approximately one hour. A list of questions have been developed to help guide the interviews; however, it is not required that each question be answered. You have the right to skip questions that you prefer not to answer. Each interview will be tape-recorded and the data will be transcribed in order to ensure accuracy. A second interview will be scheduled

approximately two weeks from the date of the first interview in order to allow you time to reflect on the first set of questions, and to give the researchers time to review the information gathered and identify areas that need further clarification. After both interviews are completed the audio recordings will be transcribed, or written out, word for word. Pseudonyms, or false names, will be used when typing your interviews to ensure confidentiality. The interviews will then be analyzed and broken down into different codes, themes, and patterns and will then be compared to other participant's interviews to identify similarities and differences. A copy of the transcribed interview will be sent to you by mail/email to ensure that our interpretations of your responses are correct.

WHAT ARE THE RISKS OF THE STUDY?
There may be some risk from being in this study. The questions asked during the interviews may be personal or of a sensitive nature, and therefore you may experience feelings of embarrassment, frustration, sadness, or anger as a result. If, however, you become upset by questions, you may stop at any time or choose not to answer a question. Participation in the study may also involve unforeseen risks such as frustration with scheduling conflicts. If you would like to talk to someone about your feelings about this study, you are encouraged to contact your medical provider.

WHAT ARE THE BENEFITS OF THIS STUDY?
You will not benefit personally from being in this study. However, we hope that, in the future, other people might benefit from this study because of the knowledge gained on your experience of weight loss after weight loss surgery.

WILL IT COST ME ANYTHING TO BE IN THIS STUDY?
You will not have any costs for being in this research study.

WILL I BE PAID FOR PARTICIPATING?
You will not be paid for being in this research study.

WHO IS FUNDING THE STUDY?
The University of North Dakota and the research team are receiving no payments from other agencies, organizations, or companies to conduct this research study.

CONFIDENTIALITY
The records of this study will be kept private to the level permitted by law. In any report about this study that might be published, you will not be identified. Your study record may be reviewed by Government agencies, and the University of North Dakota Institutional Review Board.

Any information that is obtained in this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by keeping data records in a locked filing cabinet in the Occupational Therapy Department. The research team will be the only individuals with access to your data. Pseudonyms will be used in place of your name to ensure

confidentiality. If we write a report or article about this study, we will describe the study results in a summarized manner so that you cannot be identified. You have the right to review any of your data including the audio recordings. The tapes will be destroyed after the final analysis of the information is completed.

IS THIS STUDY VOLUNTARY?

Your participation is voluntary. You may choose not to participate or you may end your participation at any time without penalty. Your decision whether or not to participate will not affect your current or future relations with the University of North Dakota. If you decide to leave the study early, we ask that you contact the research investigator to cancel scheduled interview times. You will be informed by the researchers if any important new findings develop during the study that may influence your willingness to continue to participate in the study.

CONTACTS AND QUESTIONS?

The researchers conducting this study are Emily Schlosser and Annie Van Erem. You may ask any questions you have now. If you later have questions, concerns, or complaints about the research please contact Emily at 701-709-0018, or Annie at 701-215-0025. The research advisor is Dr. Janet Jedlicka and can be reached at 701-777-2209.

If you have questions regarding your rights as a research subject, or if you have any concerns or complaints about the research, you may contact the University of North Dakota Institutional Review Board at (701) 777-4279. Please call this number if you cannot reach research staff, or you wish to talk with someone else.

Your signature indicates that this research study has been explained to you, that your questions have been answered, and that you agree to take part in this study. You will receive a copy of this form.

Subject's Name: _____

_____ _____

Signature of Subject Date

I have discussed the above points with the subject.

_____ _____

Signature of Person Who Obtained Consent Date

Appendix C

Data Analysis Summary

Data Analysis Summary

ASSERTIONS

- Overall quality of life was improved for individuals who had undergone bariatric surgery.

- As individuals lost weight they need to transition into different roles, develop new habits/routines, and implement new coping strategies. The challenges associated with these changes were counteracted by the increased energy levels and productivity in occupational engagement.

CATEGORIES

History with weight gain and weight loss	Occupational Performance	Habituation	Volition

THEMES

❖ Lifelong struggle with weight impacts self identity and self-esteem ❖ Bariatric surgery was seen as a last resort ❖ Generational similarities in obesity are common ❖ Bariatric surgery was seen as a success	❖ Increased energy level was valued as a means to increase performance in occupations ❖ Bariatric surgery leads to increased in productivity, efficiency, and ease of activity ❖ Increases in occupational engagement lead to improvement in self- esteem	❖ Changing eating habits is a challenging aspect of recovery ❖ Increased activity level impact daily routines ❖ Weight loss leads to changes within role performance and relationships	❖ Motivation is a factor in maintaining healthy lifestyles ❖ Improved overall emotional health ❖ Empathetic attitudes toward people who are obese ❖ Perceptions of negative societal beliefs have impacts on emotional health ❖ Recommendations that others undergo bariatric surgery

CODES

❖ Skewed self perception ❖ Diet Methods ❖ Qualifications of surgery ❖ Self-esteem ❖ Process of surgery ❖ Weight loss ❖ Recovery	❖ ADLs – digestive issues ❖ IADLs – shopping, home management, child rearing ❖ Work – more efficient	❖ Exercise ❖ Giving up foods ❖ Jealous ❖ Improved sexual relations ❖ Parenting concerns ❖ "Weighing in" ❖ Activities after work	❖ Empathetic ❖ Society judgmental ❖ Recommendations ❖ Increase self-confidence ❖ Increased self-image ❖ Decreased self-consciousness ❖ Decreased anxiety

Appendix D

IRB Approval Form

REPORT OF ACTION: EXEMPT/EXPEDITED REVIEW

University of North Dakota Institutional Review Board

Date: 11/24/2010 **Project Number:** IRB-201012-135

Principal Investigator: Schlosser, Emily; Van Erem, Annie

Department: Occupational Therapy

Project Title: Weight Loss Surgery and the Impact on Daily Occupations

The above referenced project was reviewed by a designated member for the University's Institutional Review Board on 12/6/2010 and the following action was taken:

☑ Project approved. **Expedited Review** Category No. 7
Next scheduled review must be before: December 5, 2011

☑ **Copies of the attached consent form with the IRB approval stamp dated** December 6, 2010 **must be used in obtaining consent for this study.**

☐ Project approved. **Exempt Review** Category No. _____
This approval is valid until _____ as long as approved procedures are followed. No periodic review scheduled unless so stated in the Remarks Section.

☐ **Copies of the attached consent form with the IRB approval stamp dated** _____ **must be used in obtaining consent for this study.**

☐ Minor modifications required. The required corrections/additions must be submitted to RDC for review and approval. **This study may NOT be started UNTIL final IRB approval has been received.**

☐ Project approval **deferred. This study may not be started until final IRB approval has been received.** (See Remarks Section for further information.)

☐ Disapproved claim of exemption. This project requires Expedited or Full Board review. The Human Subjects Review Form must be filled out and submitted to the IRB for review.

☐ Proposed project is not human subject research and does not require IRB review.
☐ Not Research ☐ Not Human Subject

PLEASE NOTE: Requested revisions for student proposals MUST include adviser's signature. All revisions MUST be highlighted.

☐ Education Requirements Completed. (Project cannot be started until IRB education requirements are met.)

cc: Dr. Janet S. Jedlicka

Signature of Designated IRB Member
UND's Institutional Review Board

12/6/2010
Date

If the proposed project (clinical medical) is to be part of a research activity funded by a Federal Agency, a special assurance statement or a completed 310 Form may be required. Contact RDC to obtain the required documents.

(Revised 10/2006)

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