A Comparison of Quality of Life of Women Pre and Post Coronary Artery Bypass Graft Surgery (CABG)

Marzsa Neff
THE FLORIDA STATE UNIVERSITY  
COLLEGE OF NURSING  

A COMPARISON OF QUALITY OF LIFE OF WOMEN PRE AND POST CORONARY  
ARTERY BYPASS GRAFT SURGERY (CABG)  

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MARZSA NEFF  

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The members of the Committee approve the Thesis of Marzsa Neff defended on March 23, 2007.

______________________________
Laurie Grubbs
Professor Directing Thesis

______________________________
James Whyte IV
Committee Member

______________________________
Sally Karioth
Committee Member

Approved:

________________________________
Dianne Speake, Director, College of Nursing Graduate Program

________________________________
Katherine P. Mason, Dean, College of Nursing

The Office of Graduate Studies has verified and approved the above named committee members.
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ABSTRACT

A convenience sample of women having Coronary Artery Bypass Graft (CABG) surgery in a hospital located in Northwest Florida were asked to complete two written questionnaires for the purpose of evaluating and comparing quality of life before and after surgery. Demographic questionnaires administered before and after surgery were also analyzed to see if any of these factors significantly impacted quality of life. The demographic data included age, marital status, household yearly income, education, cardiac rehabilitation, tobacco use, alcohol use, height, weight, work status, and comorbid diseases.

Out of eleven possible candidates ten were eligible to complete the surveys. The instrument used was the SF 36 survey. The survey asked questions about general health, physical functioning, bodily pain, social functioning, role limitations due to emotional problems, and role limitations due to physical problems, vitality/energy, and mental health. There were ten candidates that completed the preoperative survey and demographic questionnaire. One patient died before the administration of the postoperative questionnaires leaving nine to fill out the postoperative questionnaire. The data gathered showed that although there was an increase in quality of life after surgery there was not a statistically significant change. The demographic data showed no relationship with quality of life.

Conclusion: The results indicated there was an improvement in quality of life although not statistically significant. The data showed a correlation of preoperative and postoperative scores among role-physical, vitality, social functioning, and mental health indicating an improvement from baseline.
CHAPTER 1
INTRODUCTION

Coronary artery disease (CAD) is among the leading cause of death for both men and women in the United States and has been for every year for more than a century (American Heart Association [AHA], 2000). According to the National Institutes of Health (NIH) approximately thirteen million people have CAD in the United States and the number is rising every year (NIH, 2005). According to the World Health Organization (WHO) cardiovascular disease will take the lives of approximately 3.8 million men and 3.4 million women around the world every year (Emslie, 2005). The American Heart Association reports that every minute someone dies of a cardiovascular event (2005). Cardiovascular disease (CVD) is on a continuum from hypertension to atherosclerosis, and afflicts many people in various ways. Cardiovascular disease can take many forms from being diagnosed with hypertension and beginning a medication regimen to having coronary artery disease with sclerotic arteries requiring a surgical intervention.

Coronary artery disease results from the accumulation of atheromatous plaques in the coronary arteries leading to a narrowing of the vessels which in turn causes a decrease in blood flow to the heart muscle. This process of vessel narrowing can take years to develop and is accelerated by comorbid factors such as hypertension, diabetes mellitus, high cholesterol, and hyperlipidemia. Once the vessels are narrowed by the fatty plaques there is a decrease in blood flow through the coronary arteries, thus a lack of oxygen to the myocardium. The lack of blood flow and oxygen can cause myocardial ischemia resulting in the symptoms of coronary artery disease such as angina, shortness of breath, and pain (NIH, 2005). If the ischemia is significant and prolonged, the myocardial tissue will become necrotic resulting in a myocardial infarction (NIH, 2005).

One surgical intervention available for the treatment of CAD is coronary artery bypass grafting (CABG). CABG is used to restore the heart muscle with blood and oxygen via arteries and veins taken from elsewhere in the body, typically the arms, legs, or mammary (NIH, 2005). The atheromatous arteries are replaced by open vessels from other arterial or venous sites in the body. More than 500,000 CABG procedures take place each year in the United States (Rumsfeld et al., 2001). According to the AHA (2004) task force on practice guidelines, the guidelines for the CABG surgery include: extensive coronary artery disease, future reduction of angina,
survival statistics, and quality of life improvement (Rumsfeld et al., 2001). It is the practitioners’ responsibility to evaluate the quality of life as an integral part of an assessment for long-term post CABG outcomes in order to assess the medical necessity for CABG (Szygula-Jurkiewicz et al., 2005).

Among the health sciences, quality of life (QOL) is divided into five main categories: physical and material well-being, relations with other people, social activities, personal development, and recreation (Anderson et al., 1999). QOL encompasses a holistic approach to medicine by including not only the patient’s physical status, but mental, emotional, and social status as well (Szygula-Jurkiewicz et al., 2005). QOL lies on a continuum from optimum health to illness with perceived benefits of health.

The CABG intervention is used to revascularize the heart, although there is a risk of restenosis. There are certain risk factors that contribute to restenosis such as high fat diet, high cholesterol, smoking, and sedentary lifestyle. There are modifiable risk factors such as diet and exercise, but others such as genetics and ethnicity that cannot be modified. Individuals with cardiovascular disease should maintain lifestyle adjustments for the improvement of their cardiac health in order to reduce the risk of reocclusion (American Heart Association, 2005). According to NIH, those lifestyle changes include a diet low in fat, cholesterol and salt, aerobic exercise, weight loss, limited alcohol consumption, and smoking cessation.

**Statement of Problem**

The CABG procedure is an intervention with proven positive medical outcomes to restore oxygenated blood to the heart. It may be necessary for patients to elect then a CABG procedure in order for their cardiac function to be satisfactory. It is also important for patients to achieve the QOL, postoperatively, that they desire. Before QOL can be evaluated for postoperative improvement as an outcome of CABG success, it must be evaluated preoperatively to determine the patient’s place on the continuum of this abstract concept. A major surgical procedure that does not improve QOL is not considered successful in terms of the global meaning of health. According to the WHO, (1947) health is not merely the absence of disease, but rather it is a state of physical, emotional, and social well-being which is a holistic definition in nature.
Significance of Problem

Cardiovascular disease is a threat to women especially after they have reached menopausal age. According to the American Heart Association (2004), 64% of women who died suddenly of coronary heart disease had no previous symptoms. According to the AHA statistics reported in 2001, 43% of the deaths among white women and 41% of the deaths among black women were from heart attacks and other coronary events that follow a heart attack; also showing that women had a 38% mortality rate as compared to 25% for men (Miller & Kollauf, 2002). Women are less likely to: receive thrombolytics, be scheduled for stress testing, be referred for interventional cardiology, and thus have a longer delay in treatment (Cabana & Kim, 2003). Cardiovascular disease is among the top killer of women and there has been a continual shortfall of research in this area. Research is lacking for women regarding QOL both pre and post CABG. In 1993, a policy was put forth by the National Institutes of Health (NIH) called the NIH Revitalization Act that required the exploration of potential sex differences in all research funded by the NIH. This act was intended to increase the knowledge about the health of women and minorities (Miller, et al., 2002). The federal legislation required biomedical studies to include women and resulted in the discovery that there were gender differences in physiological responses to pharmaceuticals (Miller, et al., 2002). Cardiovascular disease is a significant illness among women but until recently, the research has focused mainly on middle class white men.

Historically, CVD was thought to be a man’s disease with women often being overlooked. Although CVD is more prevalent in men at a younger age, after the age of seventy-five it becomes more prevalent in women (Baldsasarre, Arthur, DiCenso, & Guyatt, 2002). Cardiovascular disease has decreased in American men over the years, but the incidence has become more evident in American women (Fox & Nussmeier, 2004). According to Fox et al., in the year 2000 approximately 94,000 women underwent CABG and half of the deaths resulting from a cardiovascular event in that year were women. According to the American Heart Association, 1 in 2.4 women’s reported deaths were due to cardiovascular disease and only 1 in 29 was due to breast cancer (AHA, 2000). The United States in 2003 reported, all cardiovascular diseases combined claimed the lives of 483,842 females while all forms of cancer combined claimed the lives of 267,902 females (AHA, 2004).
Although there are technological advances for treating ischemic cardiovascular diseases, there are gender differences in the pathophysiology, treatment, outcomes, and course of recovery for women (Rexius, Brandrup-Wogensen, Oden & Jeppsson, 2004). Women are at a higher risk of mortality following a cardiac event because they are typically older and have a higher incidence of comorbid disease such as hypertension or diabetes (Norris, et al., 2004; Schoenberg, Peters, & Drew, 2003). Women tend to have smaller hearts therefore smaller vessel anatomy, which complicates bypass surgery. Men are more likely to present with a myocardial infarction whereas women are more likely to have unstable angina, and are less likely to seek healthcare for their atypical chest discomfort (Fox et al., 2004). The research is lacking regarding women and CAD, their symptoms, clinical significance and post CABG outcomes, including QOL.

**Statement of the Purpose**

The purpose of this study is to discover how women manage coronary artery disease, and the implications for QOL. It is important to compare women’s QOL pre and post CABG surgery in order to determine factors that influence their QOL. The opportunity for improved QOL should be a factor in the healthcare provider’s decision to recommend the CABG procedure. Women tend to have a greater risk of mortality and morbidity with cardiovascular disease, and a significant improvement in QOL would justify the risk of the procedure (Schoenberg et al., 2003). The results of this study will be used to assess the impact of cardiac disease and surgery in women.

**Research Hypothesis**

The following is a hypothesis of the proposed research. The alternate hypothesis is: The QOL for a woman post CABG is improved compared to pre CABG when measured with a health survey questionnaire before and after the CABG procedure. The null hypothesis is: The QOL for a woman post CABG will have no change compared to pre CABG when measured with a health survey questionnaire before and after the CABG procedure.

**Research Questions**

Information regarding QOL of women post CABG as compared to pre CABG will be assessed by the following research question:

1. What effect in terms of physical, mental, and emotional aspect does CABG have on the QOL of women with coronary artery disease?
2. What individual demographic factors influence QOL for women?
Operational Definitions

Coronary artery bypass graft (CABG) is a surgical procedure performed on patients with severe cardiac disease. The main purpose of this intervention is to bypass the obstructed arteries with patent viable vessels harvested from elsewhere in the body. The aim of this procedure includes improved cardiac function, less impediment of cardiac blood flow, and decreased CAD symptoms such as angina and shortness of breath.

Quality of life (QOL) is an abstract concept that encompasses a person’s health (physical, mental, emotional), social status, personal achievements, and overall life satisfaction. QOL lies on a continuum and is different for each individual. Because QOL is an intangible concept, it is difficult to define and virtually impossible to put a single definition on a patient’s QOL. In this nature, a patient’s ‘QOL’ is subjective. In this study, QOL will be measured using the Short Form 36 Health Survey Questionnaire Version 2 (SF-36) (Appendix A), where the patient will rate their QOL according to various health, social, emotional, and mental indicators (Ware, 2005).

Specific factors to be measured among the mental health area include: feeling of nervousness, depression, peacefulness, happiness, daily affect, psychological distress, emotional problems, limitations in usual social role, and problems with work or daily activities. Specific factors to be measured among the physical component include: bodily pain, limitations due to pain, fatigue, energy, limitations in self-care, disabilities, symptoms of disease, level of physical activity, and activities of daily living (Ware, 2005).

Assumptions

The assumptions for the study are as follows:
1. Patients receive preoperative education regarding CABG surgery which includes the procedure itself and postoperative expectations.
2. Patients will honestly answer the health survey questionnaire to the best of their ability.
3. Patients will gain knowledge from this study regarding QOL and what aspects affect their lifestyle and perception of life.
4. CABG surgeries performed on the study participants were medically indicated.
5. The CABG procedure performed was elective and not emergent.
Limitations

There was only one hospital used in this study which is located in the Southeast United States (Northwest Florida). This is a convenience sampling of patients therefore limiting the generalizability to the entire public population of women with CAD undergoing CABG. QOL is a subjective measurement and assumes patients answer how they are feeling about their life pre and post surgery honestly. The external environment may influence the way the patient answers the questions and in what context. Another limitation to this study involves the patient answering the questionnaire at the time prior to surgery when anxiety, stress, and fear may be a hindrance to their participation. Lastly, the patients may answer in the way they interpret the researcher wishes or that which is socially acceptable. The instrumentation used has closed ended answers which may not completely and accurately express the patients’ feelings or intentions at the present time.

Conceptual Framework

Nola Pender’s (1982) Health Promotion Model (HPM) was chosen to serve as a part of the framework for this particular study because it focuses on optimizing human health, and centers on the cognitive and perceptual factors as chief determinants for health behaviors (Tomey & Alligood, 2002). The HPM stresses the relationship that the person has with their intrapersonal and external environment and the impact that it may have on individual health and well-being (Pender, Murdaugh, & Parsons, 2002). The HPM focuses on health as a continuum from optimum health to extreme serious illness with imminent death, and each individual can lie anywhere on this continuum with their definition of health (Pender, et al., 2002). It is difficult to discuss the health facets of an individual with illness, each person is expected to strive and engage in behaviors that lead them to the optimum health end of the continuum (Pender, et al., 2002). This model describes how health related topics have become holistic in nature including spiritual, emotional, physical, and mental well-being.

This model focuses on three main aspects that lead a person to develop a behavioral change. Those include: individual characteristics and experiences, behavior-specific cognitions/affect, and the behavioral outcome (Tomey, et al., 2002). Within each of these three main categories there are subcategories that can aid in assessing an individual’s likelihood of engaging in specific behaviors. Individual characteristics and experiences include prior related behaviors and personal factors such as biological, psychological, and sociocultural. Among the behavior-
specific cognitions and affect there are perceived benefits of action, perceived barriers to action, perceived self-efficacy, activity-related affect, intrapersonal influences, and situational influences. The third category of behavioral outcome includes immediate competing demands, commitment to a plan of action, and engaging in the health promoting behavior (Tomey, et al., 2002).

This model introduces major assumptions that are made when dealing with an individual and their health with promoting behaviors. One assumption is that prior behavior will influence beliefs and the degree to which the individual will engage in the health promoting behavior. Another assumption is that individuals will aspire to actively regulate their own behavior and health. These assumptions are made on the basis of behavioral science to accentuate the role of the individual with their own healthcare (Tomey, et al., 2002). This model is a way to individualize healthcare to meet the needs of each individual.

The theory of Gender and the Social Construction of Illness (2002) by Judith Lorber and Lisa Jean Moore is also part of the framework for this particular study due to the selection of a specific gender to study. This theory is important to this study because it discusses the gendered society, social phenomenon dealing with illness, and shaping the illness due to cultural and social norms. The main focus of this theory is that “the gendered body in its social context is the framework for the analysis of the social construction of illness,” (Lorber & Moore, 2002).

In order to define a study as feministic, McCormick & Bunting (2002), discuss specific criteria that must be met: the principle investigator is a woman, a feminist methodology is used, study with potential to help the subjects as well as the investigator, and the investigator’s purpose to study women within their role as women. This theory stresses that in the biomedical model of illness it is assumed that each disease process is a deviation from what is normal and that the symptomatology can be explained and the outcome is the same in any social situation, which describes medicine as a socially neutral science (Mishler, 1981). It is argued that the medical norms were based on white, middle-class men and their interaction with illness. Physicians did not take a woman’s unique and different processes into account when considering a disease process. It has been noted in several research studies that women suffer from, live with, and recover from heart disease in very distinct ways from men (McCormick, et al., 2002).
In the past, women were not included in clinical trials for research but in today’s field women are being routinely asked to participate and their bodies and their different lifestyles are taken into consideration (Lorber & Moore, 2002).

The heart of this theory is that the gender analysis is how the person transforms their physiological symptoms into the social reality that is termed illness. Gender analysis exhibits how gender is built into every aspect of illness, different disease processes, delivery of healthcare, symptoms, politics of diagnosis, the knowledge and meaning of disease and the treatment. Sociologists recommend that before a healthcare provider treats an individual for an illness, that the healthcare providers first recognize the social and environmental context of that patient’s life. Whether the healthcare provider is a man or a woman, will affect how much attention is paid to the presenting complaints of either a man or a woman and what kind of tests and treatments are ordered (Lorber & Moore, 2002). This feminist theory is used to accentuate the differences between men and women in their experiences with healthcare. The feminist perspective will allow advancement for cardiovascular healthcare and the recognition of women’s health.

**Summary**

CAD is among the leading cause of death for women in the United States. According to the National Institutes of Health (NIH), approximately 13 million people have CAD in the United States. An astounding number of which are women, whose CAD is often overlooked. As mentioned before, it is a misconception that breast cancer is the number one killer of women, moreover, heart disease is by far the deadliest of the diseases for women.

QOL is an abstract concept that encompasses a person’s health in a holistic manner: mentally, emotionally, physically, and socially. Quality of life is essential in determining the patient’s individual health and wellness and how that might improve with a surgical intervention (Schoenberg et al., 2003). Through the assessment of QOL pre and post CABG a patient will have a better understanding of what to expect after the surgical intervention as well as give the healthcare provider a key to the improvement that can be expected from a patient. The findings of this study will aid in determining how women view CAD and CABG and the effect that the surgical procedure has on their individual QOL.
CHAPTER 2
REVIEW OF THE LITERATURE

This literature review will encompass studies that focus on quality of life for CABG patients and coronary artery disease in women and will supply evidence for the need for quality of life studies. The current literature on cardiovascular disease and QOL suggests that different individuals define QOL in different ways under specific circumstances, which will be discussed in this chapter.

Women and Cardiovascular Disease

According to the American Heart Association, 1 in 3 women, age 65 years and older, have CAD and 1 in 9 women, ages 45-65 years, suffers from the disease, but only 13% regard it as their greatest health risk. Women tend to overestimate their risk of breast cancer and grossly underestimate their risk for cardiovascular disease (AHA, 2004).

This article discusses physician adherence to the guidelines set forth by the American Heart Association/American College of Cardiology (AHA/ACC). A framework was introduced which discussed reasons why physicians do not adhere to AHA guidelines, specifically the management of dyslipidemia and nutrition counseling for women with CAD. The barriers listed included: lack of awareness, lack of agreement with the guidelines, lack of self-efficacy, lack of outcome expectancy, inertia of previous practice, and external barriers at the practice level. This study suggested that further research is needed to discuss the reasons that women receive less aggressive treatment for coronary artery disease (Cabana & Kim, 2003).

Marcuccio, Loving, Bennett, & Hayes (2003), studied a group of 204 women to assess their knowledge, attitudes, and experiences of heart disease and its effect on their lives. The method used was telephone surveys with open ended questions. The majority of the women in the study (73%) were diagnosed with coronary artery disease with 27% having a diagnosis of other types of cardiovascular disease. The results of this study showed that over half of the women were dissatisfied with their health care, and many of the women reported being unable to change their lifestyles based on lack of educational, medical, and social support. The women also reported experiencing mental health concerns, specifically depression and anxiety once the diagnosis of cardiovascular disease was made. This study suggests that future research is needed to better define and focus on improving these healthcare issues for women with cardiovascular disease.
In the past, women were treated based on clinical research that was completed on middle class white men (Baldassarre, Arthur, DiCenso, & Guyatt, 2002). This study entitled, *Effect of coronary artery bypass graft surgery on older women’s health-related qualify of life*, brought out a very significant point that after the age of 75 years, heart disease is more prevalent in women. This was a longitudinal study that used the Short Form-36 tool and the Feeling Thermometer tool to quantify the results (Baldassarre, et al., 2002). The tool was given to 34 women before surgery and then at a three-month postoperative time period. With women, surgery is often more emergent with increased anxiety and depression and a higher incidence of intra-operative mortality due to smaller vessel anatomy (Baldassarre, et al., 2002). The target population for this study was women greater than 61 years having their first coronary artery bypass surgery at Hamilton General Hospital in Ontario, Canada. Thirty-four women participated in the study. Results showed that although women tend to be older during their cardiac surgery they still tend to have a better QOL and benefit from the surgery.

This study concluded that health-related quality of life was improved for women after CABG surgery, and age was a predictor for quality of life being that the older the female participant the poorer quality of life recorded. The women improved in both the physical and mental portions of quality of life (Baldassarre, et al., 2002).

The next study by Wamala, Lynch, & Kaplan (2001), discussed women’s exposure to socioeconomic disadvantages associated with coronary artery disease. The population used in this study consisted of 292 women less than 65 years old with coronary heart disease and 292 age-matched women in the controlled portion that were considered healthy. The population was gathered in Stockholm, Sweden in a coronary care unit. Healthy was defined by no symptoms associated with heart disease. Examples of socioeconomic disadvantages were large family, being born last, low education, housewife, and blue collar occupation. The researchers studied early in life disadvantages as well as later in life disadvantages separately. Both early and late in life disadvantages were associated with cardiovascular disease and thus could result in an increased risk for the need for coronary artery bypass graft surgery. It seemed that the later in life disadvantages such as, being a housewife and having a blue collar occupation, had a higher association with coronary heart disease. This study concluded that the women with the socioeconomic disadvantages had a higher incidence of coronary heart disease (Wamala, et al., 2001).
Gender Bias

Research suggests that the improvement of quality of life after surgery differs between men and women (Mickleborough, Carson, & Ivanov, 2003). The next study evaluated the quality of life post CABG in both men and women to examine if there was a significant difference between the genders post surgery. This study encompassed 2,121 patients with only 19% of them being female patients that underwent CABG. The tools used were the Physical Activity Score, the Nottingham Health Profile, and the Psychological General Well-being Index prior to surgery, at 3 months, and 1 and 2 years post surgery to determine quality of life. This study concluded that there was significant improvement in quality of life in both sexes post surgery (Sjoland, Wiklund, Caidahl, Hartford, Karlsson, & Herlitz, 1999). This study measured quality of life in both men and women undergoing CABG surgery, where only 19% of the population studied was female. They used postoperative time period of 3 months, 1 year, and 2 years after surgery for each patient. The females in the study were older than the men but both groups improved on their quality of life in all aspects (Sjoland, et al., 1999).

Guru, Fremes, Austin, Blackstone, & Tu (2006), suggested there are differences in outcomes between men and women post coronary artery bypass graft surgery. This study, performed in Ontario, Canada included variables such as death, cardiac readmission, repeat revascularization, and stroke readmission for outcomes post surgery. Out of the 66,193 patients discharged from the hospital after CABG, 22% were women and 78% were men. Out of this population women had more comorbidities such as diabetes, chronic obstructive pulmonary disease, and congestive heart failure. The women were older and came from a lower socioeconomic background when compared to the men. Results showed that there was a higher readmission rate for women one year post CABG and the majority of the diagnoses were congestive heart failure and unstable angina. This study suggests that there should be closer post operative follow up targeted at women.

The quality of vessels viewed for coronary artery bypass graft is seen by angiogram prior to surgery and intraoperatively by the surgeon. A single surgeon had 1,939 cases of CABG in which he was attempting to determine if there were gender differences in the quality of vessels which would have an effect on CABG success rates. This study concluded that women are no more likely to have smaller vessels, and that women are less likely to have diffuse disease that
could complicate the surgery. Also, mortality was studied and was not significantly different for women versus men (Mickleborough, Carson, & Ivanov, 2003).

**Quality of Life**

Patients often view medical and nursing interventions as positive and important to their healthcare, but are rarely asked about their QOL. An article by Anderson et al. (1999) on conceptualization and measurement of QOL explores the definition of the multidimensional concept, QOL. The historical social science and human science definition is also discussed. The social science definition of QOL focuses on achieving aspirations and engaging in the social role one aspires, whereas the human science definition includes mental and physical well being. Two hundred and four adults were asked what QOL meant to them and five realms of categories were configured: physical and material well being, relations with other people, social, community and civic activities, personal development, fulfillment, and recreation. Results showed that QOL is a multidimensional concept that houses different perspectives depending on what discipline is viewing the concept (Anderson et al., 1999). This concept includes Aristotle’s historical view of a “good life” or a “life of virtue” to describe QOL as well as the way sociologists and psychologists view QOL in terms of an individual’s aspirations and goals in life and the extent to which those have been fulfilled. Functional status would include appetite, sleep, energy, disease symptoms, pain, and physical distress. A person’s functional status would impact their QOL if experienced in a negative way. Since this is a multidimensional concept, it is important to utilize a tool that will measure an individual’s satisfaction with multiple venues of their life (Anderson et al., 1999).

**Quality of life and CABG**

A study conducted by Koch et al. (2004) concluded that women have a lower functional status and quality of life post CABG when compared to men. This study encompassed 1,825 patients at the Cleveland Clinic undergoing CABG, they were all given a preoperative Duke Activity Status Index (DASI) Survey to complete, and then again at 6 and 12 months follow-up. This study compared preoperative to postoperative quality of life and focused on functional status. It has been identified, specifically, for use in determining quality of life for cardiovascular disease. This study measured mainly the functional status post surgery. Women although had improvement they still had lower functional scores when compared to men. Forty-seven variables, demographics, clinical history, laboratory values, operative variables, and
postoperative morbid events were included in the analysis. This study determined that with the regard to gender the follow-up scores for women were significantly lower than for men due to advanced age, comorbidities, and insufficient relief of symptoms (Koch et al., 2004).

Falcoz et al. (2003) and Rumsfeld et al. (2001), in their studies on quality of life following CABG surgery, showed that post-surgical QOL is improved compared to pre-surgical QOL. Both of these studies included men and women, and used the SF36 survey to analyze preoperative and postoperative quality of life.

Sedrakyan et al., (2003) studied the effects of age with the change in QOL after heart valve surgery. The objective of the study focusing on age and QOL was to determine if there was a connection between age and QOL after aortic or mitral valve surgery, which is a different type of open heart surgery than CABG. More than 16% of patients who undergo this type of surgery are older than 75 years and due to our aging population, it is important to study the effect of age on QOL. The tool used to quantify this data was the Medical Outcomes Trust Short Form 36-Item Health Survey (Sedrakyan et al., 2003). The population of this study included 72 patients with mitral valve procedures and 148 patients that underwent aortic valve surgery (Sedrakyan et al., 2003).

To collect the data for this study the patients were given a baseline survey to complete one week after their surgery and they were asked to answer it in accordance with their QOL three months prior to surgery. Then at the 18-month mark, the patients were contacted to fill out the postoperative QOL surveys. Descriptive analysis was used to study the variables in addition to some comparison to the United States normal values. The variables studied included: physical, mental, and emotional scores that were analyzed. The majority of patients reported an improvement in their physical and mental status at 18-months postoperative across all age groups; therefore, there was no relationship between age and QOL after open-heart surgery. It was concluded that age alone does not determine a patient’s postoperative QOL (Sedrakyan et al., 2003).

Percutaneous coronary intervention (PCI) versus CABG is also a treatment for CAD. Szygula-Jurkiewicz, Zembalan Wilczek, Wjnicz, & Polonski (2005) suggested that the concept of health related quality of life (HRQOL) was a complicated concept because of the many attributes that comprise this concept. The components such as psychological status, social status, perception of health, and physical functioning were included in the HRQOL concept (Szygula-
Jurkiewicz et al., 2005). It also introduced the concept that QOL should begin to be utilized as a tool to determine the patient’s improvement status and long term outcome before an intervention decision is made (Szygula-Jurkiewicz et al., 2005).

The quantitative tool used in this study was the SF-36 health status survey (Szygula-Jurkiewicz et al., 2005) to assess the patient’s QOL. In this study, the sample was separated according to the revascularization procedure. Group A consisted of 392 patients who received a percutaneous coronary intervention, and Group B consisting of 104 patients undergoing coronary artery bypass graft (Szygula-Jurkiewicz et al., 2005). Although there was a difference in the physical status scores between groups, there were no significant differences in the mental status scores between the groups of interventions. Those in the group who received percutaneous intervention, had a poorer physical status score because of the repeated bouts with angina and the need for further revascularization interventions; although not statistically significant. Those in the coronary artery bypass group had an improvement in the physical status post surgical procedure due to better physical functioning and less reports of angina (Szygula-Jurkiewicz, et al., 2005). This study indicated that although coronary artery bypass grafting is a more invasive surgical procedure with a longer rehabilitation time, patients can achieve improved satisfaction with their QOL and physical status with this procedure compared to the less invasive percutaneous intervention.

Numbers of elders with cardiac events are currently at a high because of the aging population of baby boomers. A qualitative research study by Rankin, Butzlaff, Carroll, & Reedy (2005) described interventions for those elder patients older than 65 years that were unpartnered (divorced, widowed, or single) who experienced either an acute myocardial infarction or a coronary artery bypass grafting procedure. This study focused on the aspect of social support as an important part of recovery for elders from cardiac events. Researchers divided social support into three major domains: expressive, cognitive, and tangible (Rankin, et al., 2005). The interviews were collected either by a peer, who also had cardiac surgery or a cardiac event, or by a Clinical Nurse Specialist (Rankin et al., 2005).

The qualitative interviews were collected from patients, then the comments were placed into categories using the acronym FAMISHED (financial/occupational, affect, medication, interpersonal, symptom, healthcare, exercise, and diet) (Rankin, et al., 2005). The categories listed above are the different areas the elders feel their quality of life is affected. The results
indicated a higher percentage of interventions being recorded in the areas of symptom reporting (16.5%), affect (19.1%), and exercise (16.4%) (Rankin et al., 2005). The interventions included: peer advisory, social interaction with a nurse, modeled behaviors, and observational learning. According to these results, it is evident that QOL, as discussed in earlier studies, is important for patients’ perception of their health once the cardiac intervention has taken place. What is important or what may affect an individual’s quality of life differs for each person, which supports the need to take these categories and patient interventions into consideration.

Jarvinen et al., (2004) studied the effect of perioperative myocardial infarction on postoperative QOL. Two groups were identified, those with the postoperative impediment of myocardial infarction classified by elevated troponin (cardiac enzyme) and ischemic changes on an electrocardiogram, and those who did not endure a myocardial infarction during open heart surgery (Jarvinen et al., 2004). This study included 83% male participants with a median age of 63 years. This information was gathered from Tempere University Hospital from 1999-2000 to measure the consequent impact on health related quality of life (HRQOL) after open-heart surgery and whether the impact of the complication of a myocardial infarction had an effect on HRQOL. The tool used to quantify the results was the RAND – 36 Health Survey with eight dimensions that included: general health, physical functioning, role functioning/physical, bodily pain, emotional well-being, role functioning/emotional, social functioning, and energy (Jarvinen et al., 2004).

Quality of life can be a tool used as an important outcome measure for providers and consumers of healthcare to weigh the benefits from this medical intervention (Jarvinen et al., 2004). The assessments were completed the day before surgery and then at a twelve-month follow up. The research concluded that there was an improvement based on the RAND-36 scores in both the perioperative myocardial infarction (PMI) patients as well as the non-perioperative myocardial infarction patients. It was noted that 86% of the PMI patients had improved QOL according to the scale and that 87% of the non-PMI patients improved one-year post open-heart surgery. The study concluded that PMI had no effect on later mortality and there were similar improvements in QOL compared to the non-PMI patients (Jarvinen, et al., 2004).

Hunt, Hendrata, & Myles (2000), performed a quality of life study to assess if there was a relationship between preoperative risk factors and postoperative pain and sleep, and also assessed for gender differences. This study used the SF 36 survey and included 123 participants.
The average age of the participants was 64 years and the study reported that one third of the patients that underwent this surgical procedure were greater than 65 years old. This study concluded that there was a significant improvement in quality of life post surgery with a $p < 0.0001$. Rumsfeld et.al (2001) reported that the preoperative SF36 physical component summary score is useful in the risk stratification for mortality after CABG surgery (Hunt et.al, 2000). This study also concluded that there were no significant gender differences in quality of life pre and post surgery.

**Summary**

Overall the literature review revealed an improved QOL following a cardiac procedure - CABG, PCI, or valve replacement. Overall, more men than women were involved in the studies that were reviewed, but the majority of studies showed that improvement in QOL was non-discriminate for gender and age for post cardiac procedures. Several of the studies indicated that it is the clinicians’ responsibility to evaluate patients’ expectations for post surgical QOL when discussing the possibility of CABG or other heart surgery. CABG is a major surgical procedure that should take into consideration the many facets of an individual’s health – emotional, physical, and psychosocial well-being.

One study did show that the improvement in QOL was significantly greater for men than women in the area of functional status. This study focused more on the differences between men and women rather than just focusing on women completely (Vaccarino et al., 2003). It seems that there is a need for more research in this area to determine the QOL differences between men and women post cardiac surgery.
CHAPTER 3
METHODOLOGY

This chapter will present the methodology used in assessing QOL for women pre and post CABG using the Short Form-36 Health survey questionnaire developed by the Rand Corporation and used in the Health Insurance Study Experiment/Medical Outcomes Study (1993) (Appendix A). The methods for data collection and schematic for the study are outlined. This chapter will present the design, setting, sample, procedure, protection of human subjects, and data analysis.

Design

This is a non-experimental, descriptive, and explorative study. This study by definition is non-experimental because no intervention was introduced when the data was collected and it was not randomized, but rather a convenience sample was taken. The intervention that took place during this study was the coronary artery bypass graft procedure. Although it is not introduced by the researcher it may affect the dependent variable, QOL. This study is descriptive in nature because it attempts to accurately portray characteristics of people and situations and to what frequency specific phenomena occur (Polit & Beck, 2004). This research is explorative in that it explores facets of the concept QOL and the relationships that exist between this concept and the women being studied with CABG.

Setting

This study was conducted in the Northwest Florida region in a not for profit hospital in the area. While the patients were in the hospital awaiting CABG, the assessment of pre-surgical QOL was initiated. All of the patients were awaiting an elective CABG procedure and had not had this procedure before. At the time of informed consent (Appendix B) the patient was asked to provide their address and phone number for contact postoperatively. At this hospital studied there is no protocol set forth to study QOL for patients having CABG either before or after their surgical procedure. This setting serves much of the open-heart surgeries in the surrounding five counties in the Northwest Florida area and serves all types of people from different cultures, socioeconomic backgrounds, ages, and gender.
Sample

A nonprobability convenience sample of 10 women of various ages was obtained from
the Northwest Florida Hospital and then followed post discharge from the hospital with the
approval of the appropriate institution to assess the patients. All participants in this study were
women of varying age, with no specifications. The inclusion criteria for participation included
women who: (a) were scheduled for an elective CABG, (b) had no prior CABG surgery, (c) had
signed an informed consent form (d) were able to read and write English, and (e) were able to
participate in the study without additional outside help.

Instrumentation

The instrumentation chosen for this study was The Short Form-36 Health Survey
Questionnaire Version 2 (SF-36) (Appendix A). This instrument was chosen because it was used
extensively in the studies reviewed and has a high reliability and validity in studying quality of
life. Permission and access to this tool was gained with approval from the author and those that
hold the copyright to the tool. This tool was developed at the Rand Corporation for use in the
Health Insurance Study Experiment/Medical Outcomes Study (1993). This instrument is
described as a short, generic measure of subjective health information that can be used in a
variety of settings. This questionnaire began as a twenty question survey and then was extended
to give the instrument more psychometric properties (Bowling, 1997).

This instrument contains 36 items which measure eight dimensions: social functioning,
role limitations due to physical problems, role limitations due to emotional problems, mental
health, energy/vitality, pain, and general health perception. For analysis, the eight dimensions
mentioned above are further broken down into two subscales: the physical component summary
and the mental component summary (Bowling, 1997). This instrument measures the positive as
well as negative aspects of an individual’s health. The scoring of each question is either
dichotomous (yes or no) or varies on a Likert-type scale from none to very severe with a total of
five levels.

The content validity had been vigorously studied among professional colleagues in the
sense of responsiveness, correlation with other scales, and sensitivity. Failde & Ramos, 2000
reported a high, consistency with Chronbach’s alpha being obtained between 0.72 and 0.94. For
test and retest reliability the coefficients ranged from 0.43 to 0.90 (Bowling, 1997).
In addition to the QOL survey, there were two demographic sheets included for each participant that did not contain any identifying information or markers. There was a demographic sheet given pre and postoperatively with some minor differences. The demographic sheets included age, ethnicity, marital status, educational level, comorbid illnesses, tobacco and alcohol use, career/work status, and cardiac rehabilitation participation (Appendix C & D). The survey was self-administered and took approximately 15 minutes to complete.

**Protection of Human Subjects**

Permission to perform this study was obtained from The Florida State University Institutional Review Board (Appendix E) and the Institutional Review Board of Tallahassee Memorial Hospital (Appendix F). After approval from the reviewing boards, the data collector approached the nurses of the cardiac services to explain the study and enlist their support in identifying patients who were eligible. The nurses approached potential patient participants to inquire if they would be interested in participating in the study. The patients were given a letter describing the study (Appendix G), the questionnaire, the patient’s voluntary right to participate, and guarantee of confidentiality. The patients were then asked to sign an informed consent, a HIPPA (Health Insurance Privacy & Portability Act) authorization form (Appendix H), and any questions or concerns were answered at this time.

Data collection in the hospital took place in a private room with no extraneous external distractions and confidentiality was ensured when completing the questionnaire. During the distribution of the questionnaires there were no identifying information or markers on the packets and they were double enveloped to ensure confidentiality. The postoperative questionnaire was mailed to the participants with a self addressed stamped envelope to return without any identifying information. The questionnaires are alphabetized in order to compare pre and postoperative questionnaires from the specific patients. The nurses placed the completed surveys in a locked box where only the researcher had access. The data collector kept all answered questionnaires sealed and in personal possession in a locked drawer at the researcher’s office. Only the researcher, the statistician and the thesis chair had access to the raw data. Each participant was given access to the researcher, the thesis chair person, the FSU IRB and the participating hospital IRB if they had any questions or concerns that needed to be addressed at anytime during the study.
This study was not controversial and did not raise any concerns for the public population or the participants. Patients gained insight into QOL and how their journey with CAD and CABG affected their QOL.

**Procedure**

Written approval from The Florida State University Institutional Review Board (FSU IRB) and a proposal letter with a detailed description of the study was sent to the participating hospital’s Institutional Review Board (Appendix I & J).

Approval from the participating hospital was obtained, and then a poster with an introduction to the study and contact information was put in staff only areas of the unit of the hospital (Appendix K). The nurses at the hospital were contacted by the researcher to aid in recruitment of appropriate patient participants for the study. Prospective participants were approached individually by the nurses to explain the study. The nurse used a script provided by the researcher to introduce the study (Appendix L). Patients who agreed to participate were asked to read and sign the informed consent, and received a packet containing the Short Form – 36 Health Survey Questionnaire and a demographic questionnaire which they filled out in the privacy of their hospital room prior to the CABG procedure. The patients then were asked if they could be contacted via postal mail or telephone in order to complete a post CABG survey. If they agreed, a HIPPA authorization form was signed. The patients completed an additional sheet with contact information that was kept separate from the questionnaires. For completion of the postoperative questionnaire, the patients were contacted via postal mail with serial mailers with their permission for the collection of the postoperative data.

Each participant understood that participation was strictly voluntary and that they could contact the FSU IRB, the participating hospital’s IRB or the researcher if any questions or concerns arose before, during, or after the study. Once each questionnaire was completed, it was sealed and stored in the personal possession of the researcher until they were placed in the locked box at the researcher’s office. There was an identifying letter on each individual questionnaire (eg. A, B, C, etc.) so that the researcher could compare pre and postoperative questionnaires on each patient to measure QOL and demographic data comparison. No one had access to the survey questionnaires except for the researcher and the thesis chairperson. The data will be kept for two years after the date of collection then will be destroyed using a paper shredder.
Data Analysis

The research questions as posed above were answered using statistical analysis of the results of the Short Form-36 Health Survey questionnaire, as well as descriptive analysis of the demographic data. A paired sample Z-test, matched pair statistical analysis, Pearson Correlation, and Non-parametric statistics were utilized in comparing pre and postoperative conditions. A frequency distribution was utilized to see at first glance what aspects of the QOL questionnaire scored highest and lowest overall. This would give information regarding what aspects of QOL were least and most improved upon. Pearson’s correlation also was used to study the demographic data and compare pre to postoperative surveys. Descriptive statistics were used to give information about the mean, median, and mode of the demographic data to determine if any of these discriminate variables would differentiate themselves from the rest (Appendix M).

Summary

The study’s main purpose was to compare the QOL of women pre and post CABG. This is of great importance to the healthcare field in today’s world because the emphasis is to focus more on the health of a person as a whole: mind, body, and soul. The data analysis was to identify if there was an improvement in QOL after the surgical intervention at the participating hospital. This study will enhance the medical field’s ability to recognize the needs of women post CABG and introduce other facets of their healthcare.
CHAPTER 4
RESULTS
Data Collection

This study addressed the impact of coronary artery disease, women and their option for coronary artery bypass graft surgery and the effect that it may have on their quality of life. The purpose of this study was to determine if there was a difference in quality of life preoperatively versus postoperatively for women that have CABG. The population sampled was female patients in a hospital in the Northwest area of Florida. Potential participants were contacted by the nurses that work on the Cardiac Progressive Care Unit (CPCU) and asked to complete two instruments: a demographic questionnaire and a Short Form 36 health survey questionnaire. A total of ten candidates were contacted to participate in this study and were given the instruments by the nursing staff of the CPCU. The postoperative survey and demographic questionnaire were mailed to the participants with a self addressed stamped envelope to return three months post surgery.

Description of the Sample

The sample included ten participants; this is a small sample due to the amount of CABG procedures completed on women at this hospital. Each female that had the CABG procedure was included in this study during the research period. There was one patient excluded from the study due to her inability to read and write English. The response rate for this study for obtaining post procedure surveys was 90%. One participant died before the postoperative survey timeline was complete. All of the participants in this study were women that had the CABG procedure and agreed to complete the survey and demographic instruments. There was only one other women who had CABG surgery during the allotted time frame and she was excluded due to the fact that she did not speak English. All patients who were contacted agreed to participate. The following tables provide a description of the individuals that participated in the study.

Table 1 describes the ages of the subjects. The sample consisted of females with a mean age of 68 years (S.D. = 9.23). This is to be expected given the typical age of women receiving CABG surgeries. The youngest female participant was 51 years old and the mode was 77 years old.
Table 1: Age Descriptive Statistics of the sample

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>68.0 years</td>
</tr>
<tr>
<td>Median</td>
<td>67.5 years</td>
</tr>
<tr>
<td>Mode</td>
<td>77.0 years</td>
</tr>
</tbody>
</table>

Table 2 describes the weight, height characteristics, and Body Mass Index (BMI) of the females in the sample. Weight and height are used to calculate body mass index (BMI) as a risk factor for coronary artery disease \((BMI = \text{weight (lb)} / \text{[height (in)]}^2 \times 703)\). Overweight adults are at an increased risk of developing coronary artery disease according to the CDC. The BMI and weight status are listed respectively to determine the amount of fatness for an individual. A BMI<18.5 = under weight; 18.5-24.9 = normal weight; 25.0-29.9 = overweight; and >30.0 = indicates obesity. Participants in this study were overweight (mean BMI = 28.35), which is a modifiable risk factor for coronary artery disease.

Table 2: Weight, Height, & BMI Characteristics of participants in the study

<table>
<thead>
<tr>
<th>Sample</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>160.66 lbs.</td>
<td>47.12</td>
</tr>
<tr>
<td>Height</td>
<td>62.4 in.</td>
<td>2.69</td>
</tr>
<tr>
<td>BMI</td>
<td>28.3599</td>
<td>7.3099</td>
</tr>
</tbody>
</table>

Table 3 describes the racial/ethnic characteristics among the participants in the study. According to the American Heart Association (2004), the prevalence of CAD in white females was 35% compared to 49% of black females.

Table 3:  Racial & Ethnic Characteristics of the Sample

<table>
<thead>
<tr>
<th>Sample</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Race</td>
<td>White</td>
<td>Black</td>
</tr>
</tbody>
</table>
Table 4 describes the marital status of the participants in the study. The participants in the study were split evenly, half were married and half were either single or widowed. Studies have indicated that being alone or not partnered has an effect on quality of life (Rankin et al., 2005).

<table>
<thead>
<tr>
<th>Marital status</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Single/Widowed</td>
<td>50%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 5 describes education completed by the participants of the study. The majority of the participants completed some college, but the completion of a degree was not specifically asked on the demographic survey.

<table>
<thead>
<tr>
<th>Education</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School/Technical School</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td>College</td>
<td>50%</td>
<td>90%</td>
</tr>
<tr>
<td>No Response</td>
<td>10%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 6 describes the family income per year for each participant. The majority of the participants were in the lower or middle class according to income, with only one participant whose answer was not completed. Socioeconomic disadvantage has also been linked to coronary artery disease.

<table>
<thead>
<tr>
<th>Income Level</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ $25,000</td>
<td>60%</td>
<td>60%</td>
</tr>
<tr>
<td>$25,000-$50,000</td>
<td>30%</td>
<td>90%</td>
</tr>
<tr>
<td>$50,000-$75,000</td>
<td>0%</td>
<td>90%</td>
</tr>
</tbody>
</table>
None of the participants were working at the time of their surgery nor were they working after their surgery when the postoperative survey was completed. Most of the women in this study were of retirement age, which likely explains the work status of the participants.

Table 7 describes the comorbid characteristics of the participants in the study. The majority of the participants did have some other comorbid conditions that likely attenuated the progression and effects of their cardiovascular disease. The main comorbidities that were found in this sample included hypertension, Type II diabetes mellitus, hypothyroidism, gastroesophageal reflux disease, and hyperlipidemia. Other comorbid diseases seen in the sample were chronic obstructive pulmonary disease, obstructive sleep apnea, aortic stenosis, cancer and arthritis. All (100%) of the patients reported at least one comorbidity.

<table>
<thead>
<tr>
<th>Comorbidities</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>80%</td>
</tr>
<tr>
<td>Diabetes Mellitus</td>
<td>20%</td>
</tr>
<tr>
<td>Hypothyroidism</td>
<td>30%</td>
</tr>
<tr>
<td>Gastroesophageal Reflux Disease</td>
<td>50%</td>
</tr>
<tr>
<td>High Cholesterol</td>
<td>20%</td>
</tr>
</tbody>
</table>

Participants were asked if they used any form of tobacco products prior to and after surgery. Tobaccoism is another modifiable risk factor for coronary artery disease and is used as a variable in risk stratification for heart disease. Preoperatively and postoperatively, 50% of the participants reported that they did use tobacco products and 50% reported that they did not.

Alcohol consumption also has an impact on cardiovascular health. The majority of the participants (90%) reported that they did not use alcohol either pre or post-operatively.

It is recommended that individuals attend a cardiac rehabilitation program after surgery to help them cope with the physical, emotional, and mental stressors that coincide with having a
major surgical intervention. Of the sample of women, 20% of the participants reported attending rehabilitation and the other 80% did not.

The above tables represent the statistical analysis and answers to the demographic questionnaires presented to the participants before and after surgery. Further discussion and comparison of the demographics can be found in Chapter 5.

Research Question I

What effect in terms of physical, mental, and emotional aspects does CABG have on the QOL of women with coronary artery disease?

In order to answer this research question, participants were given the quality of life survey prior to and three months after CABG surgery to determine if QOL was improved postoperatively and, specifically, what aspects were affected. The surveys are divided into eight different categories/subscales: PF = physical functioning, RP = role physical, BP = bodily pain, GH = general health, VT = vitality, SF = social functioning, RE = role emotional and MH = mental health. Table 8 below shows the combined data for the group pre and post surgery for the 8 subscales. The data represents the group mean scores for each of the subsections of the survey. These scores represent continuous variables from 0-100. The higher the score reported by the patient the better the health status. These scores are standardized to the general US population (mean = 50, SD = 10). Using Chronbach’s Alpha, the internal consistency for the eight subscales measuring the same variables was 0.798 preop and 0.833 postop.

<table>
<thead>
<tr>
<th>Table 8: Combined Data for the Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subscales:</td>
</tr>
<tr>
<td>Mean (pre):</td>
</tr>
<tr>
<td>Mean (post):</td>
</tr>
</tbody>
</table>

Table 9 below represents the differences of the mean group scores from preoperatively to postoperatively which were not significant for any of the eight subscales. This table represents the combined scores for the group of the eight subscales preoperatively and postoperatively.
Table 9: Difference Analysis

\[ t = -1.629 \quad \text{Sig.(2-tailed)} = 0.147 \quad 95\% \text{ Confidence Interval} = -3.0833-0.5683 \]

*denotes \( p<0.05 \)

Table 10 below describes comparing the total postoperative scores minus the preoperative scores for the group as a whole combining all eight subscales. The NBS group is the norm based scoring that the variables were transformed to for calculation. The group as a whole had no significant change in quality of life from pre to postoperative. There was an improvement but not a statistically significant difference in the rating of quality of life before surgery and after surgery.

Table 10: Z test Combined Subscale Scores

<table>
<thead>
<tr>
<th></th>
<th>Post-Pre</th>
<th>Post_NBS-Pre_NBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z-score</td>
<td>-0.415</td>
<td>-0.652</td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td>0.678</td>
<td>0.515</td>
</tr>
</tbody>
</table>

*denotes \( p<0.05 \)

Table 11 below indicates the Physical Component Summary (PCS) and the Mental Component Summary (MCS) scores from the eight subscales of the SF36 survey. These scores reflect the patient’s overall physical and mental health status based on their answers to the individual questions. The PCS and MCS are continuous variables from 0-100, the higher the score the better the health status. These scores are standardized to the general US population (mean = 50, SD = 10).

Table 11: PCS & MCS Scores

<table>
<thead>
<tr>
<th>Summary</th>
<th>PCS</th>
<th>MCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>33.61 (8.80)</td>
<td>44.01 (11.30)</td>
</tr>
<tr>
<td>Post</td>
<td>35.26 (8.57)</td>
<td>39.70 (9.33)</td>
</tr>
</tbody>
</table>

Table 12 below describes the z scores (number of standard deviations from the mean) and 2-tailed paired t-test scores for the eight variables. This table shows the difference between
grouped postoperative scores and grouped preoperative scores for each of the eight subscales. The results show no significant changes in quality of life scores between pre and postoperative. The results do not support a significant change in physical functioning, role physical, bodily pain, general health, vitality, social functioning, and role emotional or mental health as a result of CABG surgery for this population of women. Although there was not a significant change there was an improvement noted among the sample of participants. Therefore, the null hypothesis is accepted.

Table 12: Postoperative scores-preoperative scores

<table>
<thead>
<tr>
<th>Variable</th>
<th>Z-score</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>po_PF-pr_PF</td>
<td>-.140</td>
<td>.889</td>
</tr>
<tr>
<td>po_RP-pr_RP</td>
<td>-.511</td>
<td>.610</td>
</tr>
<tr>
<td>po_BP-pr_BP</td>
<td>-.564</td>
<td>.573</td>
</tr>
<tr>
<td>po_GH-pr_GH</td>
<td>-.357</td>
<td>.721</td>
</tr>
<tr>
<td>po_VT-pr_VT</td>
<td>.000</td>
<td>1.000</td>
</tr>
<tr>
<td>po_SF-pr_SF</td>
<td>-1.612</td>
<td>.288</td>
</tr>
<tr>
<td>po_RE-pr_RE</td>
<td>-.339</td>
<td>.734</td>
</tr>
<tr>
<td>po_MH-pr_MH</td>
<td>-.399</td>
<td>.107</td>
</tr>
<tr>
<td>po_PCS-pr_PCS</td>
<td>-.415</td>
<td>.678</td>
</tr>
<tr>
<td>po_MCS-pr_MCS</td>
<td>-1.718</td>
<td>.086</td>
</tr>
</tbody>
</table>

* denotes $p < 0.05$

Table 13 demonstrates the correlation with the pre and post group scores for the eight quality of life subscales. A nonparametric analysis was used to determine predictability for improvement in quality of life. Each individual patient’s answers were compared pre and postoperatively; a positive correlation was predictive of a trend toward an improved quality of life. There was a statistically significant positive correlation with the pre and postoperative role physical, vitality, social functioning, role emotional, and mental health scores indicating that these scores were significantly improved postoperatively.
Table 13: Paired Sample Correlations Pre and Post Operatively

<table>
<thead>
<tr>
<th>Pair</th>
<th>Correlation</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>po_PF &amp; pr_PF</td>
<td>.299</td>
<td>.434</td>
</tr>
<tr>
<td>po_RP &amp; pr_RP</td>
<td>.718</td>
<td>.029*</td>
</tr>
<tr>
<td>pr_BP &amp; po_BP</td>
<td>.617</td>
<td>.077</td>
</tr>
<tr>
<td>pr_GH &amp; po_GH</td>
<td>.061</td>
<td>.876</td>
</tr>
<tr>
<td>pr_VT &amp; po_VT</td>
<td>.880</td>
<td>.002*</td>
</tr>
<tr>
<td>pr_SF &amp; po_SF</td>
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<td>.041*</td>
</tr>
<tr>
<td>po_MH &amp; pr_MH</td>
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<td>.125</td>
</tr>
<tr>
<td>pr_RE &amp; pr_RE</td>
<td>.736</td>
<td>.024*</td>
</tr>
<tr>
<td>po_MCS &amp; pr_MCS</td>
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<td>.021*</td>
</tr>
<tr>
<td>po_PCS &amp; po_PCS</td>
<td>.179</td>
<td>.644</td>
</tr>
</tbody>
</table>

*denotes p < 0.05

Research Question II

What individual demographic factors influence QOL for women?

In order to answer this research question it was pertinent to correlate age and BMI with the eight subscales included in the SF36 survey to see if either of the demographic variables significantly affected the QOL scores. Correlation analysis was completed between age, BMI, and the eight subscales included in the survey. These two demographic variables were chosen because they were the only variables that were continuous in nature for ease of statistical analysis.

Table 14 indicates no significant correlation between age or BMI and the eight quality of life subscales, although discussion of some of the demographic factors is important here. This is likely due to the lack of variability in scores, which is common with bivariate correlations. There was a negative correlation, although not statistically significant, between age and physical functioning, age and role physical, age and bodily pain, and age and general health. Although not statistically significant, there was a tendency toward a decrease in bodily pain, but also a decrease in general health, and physical functioning as age increased. There were other negative correlations seen between age and role-emotional and age with mental health, although not
statistically significant. There was no significant correlation between BMI and any of the eight variables, meaning that BMI did not affect the patient’s physical functioning or mental health status. Although not statistically significant, there was a negative correlation between BMI and mental health meaning as BMI increased mental health status decreased. There were also positive correlations noted, although not statistically significant. Age was positively correlated with vitality and social functioning, which means as age increased so did the score of vitality and social functioning. BMI was also positively correlated with a few of the variables, although not statistically significant. BMI was positively correlated with physical functioning, role-physical, bodily pain, general health, vitality, social functioning, and role-emotional.

<table>
<thead>
<tr>
<th>Type</th>
<th>Age</th>
<th>BMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>d_PF</td>
<td>Correlation</td>
<td>-.045</td>
</tr>
<tr>
<td></td>
<td>Sig (2-tailed)</td>
<td>.909</td>
</tr>
<tr>
<td>d_RP</td>
<td>Correlation</td>
<td>-.251</td>
</tr>
<tr>
<td></td>
<td>Sig (2-tailed)</td>
<td>.515</td>
</tr>
<tr>
<td>d_BP</td>
<td>Correlation</td>
<td>-.440</td>
</tr>
<tr>
<td></td>
<td>Sig (2-tailed)</td>
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</tr>
<tr>
<td>d_GH</td>
<td>Correlation</td>
<td>-.227</td>
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<tr>
<td></td>
<td>Sig (2-tailed)</td>
<td>.557</td>
</tr>
<tr>
<td>d_VT</td>
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</tr>
<tr>
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<td>Sig (2-tailed)</td>
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<tr>
<td>d_SF</td>
<td>Correlation</td>
<td>.015</td>
</tr>
<tr>
<td></td>
<td>Sig (2-tailed)</td>
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</tr>
<tr>
<td>d_RE</td>
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<tr>
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<tr>
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<tr>
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<td>Sig (2-tailed)</td>
<td>.710</td>
</tr>
</tbody>
</table>

* denotes $p < 0.05$
Summary

This chapter provided results associated with the quality of life and demographic variables for women who had coronary artery bypass graft surgery. The only statistical significance that was found was a correlation between pre and postoperative role physical, vitality, social functioning, role emotional, and mental health scores for individual patient comparisons. Although positive in direction, no statistically significant correlations were found for physical functioning, bodily pain, general health, and physical summary. There were no statistically significant correlations made between and within the demographics and total QOL scores. There were no significant differences in the mental health or physical health scores from preoperative to postoperative. Overall there was no statistically significant improvement or difference from the preoperative to the postoperative state although there was a statistically significant positive correlation among several of the subscales, indicating an expected improvement in quality of life.
CHAPTER 5
SUMMARY

The purpose of this study was to determine if there was a difference in QOL for women pre compared to post coronary artery bypass graft surgery and to determine if there were any demographic characteristics that affected their QOL before and/or after CABG. A sample of ten patients completed two demographic questionnaires (one pre and one post surgery) and two 36-item questionnaires to address these issues. This chapter discusses the study findings, limitations, and recommendations for future studies.

Discussion of the Results

For this small sample of women, the hypothesis that CABG surgery improves QOL was not supported. This was an unexpected outcome for this study, but was likely due to the small sample size. There was a positive correlation for some of the individual question sections such as physical functioning, which would mean that the participant answers were more positive postoperatively compared to preoperatively. There were positive correlations made between some of the subscales meaning an improvement could be anticipated postoperatively. There was no statistical significance or correlation with the demographic data and the subscales, although there were tendencies noted.

The study population had a baseline physical and mental component summary that was less than the U.S. general norm. The U.S. general norms were 44.34 PCS and 52.78 MCS. The U.S. general norm was gathered from women of the same age group to test validity and reliability of the survey and its consistency (Appendix N) (Ware, et al., 2002). The PCS and MCS scores are cumulative of the eight subscales of the SF 36 survey. The mean preoperative PCS score was 33.61 and the mean preoperative MCS score was 44.01 for the sample studied. The physical component of the survey was modestly increased after surgery from 33.61 to 35.26. There was an average improvement of 9.5% from preoperative to postoperative in the physical component of the quality of life scale. This is interpreted as an improvement in the mean score for the physical aspect of quality of life from preoperative baseline to postoperative. The physical aspect of QOL included: physical functioning, role-physical, bodily pain, and general health.

The sample had a preoperative mean MCS score of 44.01 and the postoperative average MCS score was 39.70 thus showing a modest decrease of 9% in the mean mental health scores.
from pre to postoperatively. Some characteristics that could be involved include anxiety, pain, recovery from anesthesia and change in household responsibilities. The postoperative survey was completed only 3 months after the procedure versus one year, as in most other studies, which may have impacted the results (Guru, et al., 2006). With more time, patients can appreciate more improvement in function and quality of life. It is also important to note that those patients with a higher than average quality of life (PCS & MCS) score prior to surgery would not have as much room for significant improvement as those with a lower quality of life score before surgery.

The sample also had higher summary scores for the eight subscales than the U.S. general population for their age group (65-74 years). For this sample, the physical functioning (PF) score pre and post was 43.00 and 44.44, respectively, and for the general population, the PF score for women age 65-74 years is 43.63 and for women over 75 are 37.22. It is important to look at both age groups of women because the average age of the women in the sample was 68 years old with the mode being 77 years old. The general population scores were completed on women in the same age group although their comorbidities were not known. This indicates that the women included in this study had a higher physical functioning than the general U.S. population of women in the same age group (Ware, Kosinski, & Dewey, 2002).

The next subscale mentioned is role physical and bodily pain scores that were lower in the sample group when compared to the general U.S. population score for women of their same age group. General health scores were higher for the women of this study compared to the U.S. general population of women in the same age group. The vitality score for this sample was lower than that of the general population of the same gender and age group. Social functioning, role emotional, and mental health were higher preoperatively than that of the general U.S. population of women in the same age group, but not postoperatively.

It is interesting that these scores were comparable to the general population of women in the same age group not knowing which or if any of the women surveyed had cardiovascular disease or comorbidities. Overall the women in this study had a higher physical functioning, general health, and social functioning before and after surgery when compared to the U.S. population general norms (Ware, et al., 2002).
Research Question I

I. What effect in terms of physical, mental, and emotional aspects does CABG have on the QOL of women with coronary artery disease?

In order to assess these variables, the survey asked the participants questions regarding pain, physical functioning, emotional issues, and the general view of their own health status. Using the Pearson Correlation, role-physical, vitality, social function, and mental health all showed statistically significant positive correlations between the pre and postoperative scores. An increase in quality of life postoperatively could be anticipated based on the data presented. In the sections for role-physical, vitality, social function and mental health the respondents’ answers improved from the preoperative baseline assessed. There was no statistical significance in the overall group changes from preoperative to postoperative quality of life, but among the individual subsections there were significant positive correlations as noted above. There was an improvement in total physical component and a decrease in the total mental health component. The women are expected to return to their normal activity level after surgery or perhaps beyond because their cardiovascular disease would no longer be an issue, which is not a realistic expectation for the three month study period.

Research Question II

II. What individual demographic factors influence QOL for women?

Pearson correlation was used to determine if any of the demographic factors, particularly age and BMI, influenced quality of life. These two demographic variables were chosen for analysis because they were the only continuous variables. There were no statistically significant correlations between age and the eight individual variables for women post coronary artery bypass graft surgery. Although women tend to be older than men when they have open heart surgery there should still be an improvement in quality of life when compared to preoperative QOL. There were trends toward negative correlation, although not statistically significant with physical functioning, role physical, bodily pain, and general health associated with age, therefore when age increased these QOL variables decreased. It could be expected that since the women were older their physical functioning and general health would decrease although in this sample they were still higher than the U.S. general population norms. There were also no statistically significant correlations among BMI or age and the eight subscales, although trends were seen. Trends such as a negative correlation among age: physical functioning, age: role-physical, age:
bodily pain, age: general health, age: role-emotional, and age: mental health, although not statistically significant. This would mean that as age increases the subscales mentioned above would decrease. Also, there were positive correlations made between BMI and seven of the subscales except for mental health which showed a negative correlation, although none of them were statistically significant. It would be interesting to investigate what level age or BMI might correlate with the eight subscales to have a significant affect. This would mean that BMI and age did not play a significant role in quality of life pre or postoperatively for these patients. No relationships were found among the other demographic variables at this point for women and quality of life pre and post coronary artery bypass graft surgery.

Relationship of Findings to the Literature

Overall, the results of this study are similar to those findings from similar studies, although the improvement in quality of life is not statistically significant for the current study.

The American Heart Association (2004) reports that 1 in 3 women age 65 years and older in the United States have CAD. In the current study, the average age of these women was 68 years old with the mode being 77 years old thus making them older than the general population of women with CAD. Advanced age could conceivably affect postoperative QOL, although no significant relationship was found between age and the QOL score in the current study.

A study conducted by Sedrakyan et al., (2003) examined the correlation between advanced age and complications and poorer quality of life post CABG. The study included an 18-month follow-up and concluded that age alone does not determine a patient’s postoperative quality of life. Consistent with the literature, the current study showed that there was no significant correlation between age and the change in postoperative quality of life scores.

According to Wamala et al., (2001) coronary artery disease is associated with Socioeconomic disadvantages. The women in the current study reported lower education and lower income, which translated to socioeconomic disadvantages. Sixty percent had an average household income of less than $25,000 per year. According to the literature socioeconomic disadvantage is defined as lower household income, being born in a large family with low income, lower educational class, and single parent households. These characteristics have been proven to affect QOL (Wamala, et al., 2001). Although the patient’s health shows improvement regarding symptoms of CAD, their quality of life may be lower due to socioeconomic
disadvantages present in their lives. For example, the patient may be free of symptoms but not being able to buy healthier food because of the expense could affect their quality of life.

Guru, et al., (2006) discussed differences in outcomes between men and women post coronary artery bypass graft surgery, and found that women had poorer outcomes than men. He attributed these differences to comorbidities, advanced age, lower socioeconomic background, and a higher readmission rate when compared to men. The study sample was 66,193 patients with 22% being female. In the current study including only 10 female subjects there was no significant correlation between comorbidities and QOL, but there were some noteworthy findings. Eighty percent of the women had hypertension and 20% had diabetes mellitus, both predisposing factors for the development of coronary artery disease. These comorbidities could complicate their surgeries as well as their health, and in turn affect their quality of life. The added burden of comorbidities may have attenuated any improvement in QOL afforded by the CABG surgery.

Falcoz et al., (2003) and Rumsfeld et al., (2001) showed that with a one year follow-up assessment of quality of life post coronary artery bypass graft surgery there was a statistically significant improvement. The current study, although not statistically significant due to many limitations, still indicated that there was either an improvement in the quality of life scores or they remained the same. Falcoz, et al. and Rumsfeld had a one year postoperative follow-up whereas the current study was only a 3 month follow-up. At the one year mark, patients are more likely to be fully active and more likely to have returned to or surpassed their preoperative level of functioning. At 3 months, many of the complications associated with the surgery are resolved, but the patients may not be back to their original functional status thus resulting in less improvement in QOL at 3 months as compared to a year.

The studies mentioned in the review of literature were all predictive of an improved quality of life post coronary artery bypass graft surgery. The current study also showed an improvement although not statistically significant. There was a statistically significant correlation among each of the individual subscales so that an improvement could be anticipated.

**Related Findings to the Theoretical Framework**

Nola Pender’s (1982) Health Promotion Model (HPM) was chosen to serve as a part of the framework for this particular study because it focuses on optimizing human health and centers on the cognitive and perceptual factors as chief determinants for health behaviors.
(Tomey & Alligood, 2002). The HPM focuses on health as a continuum from optimum health to extreme serious illness with imminent death, and each individual can lie anywhere along the continuum (Pender, et al., 2002).

There are many factors that play a role in a patient deciding to undergo coronary artery bypass graft surgery, an invasive but potentially life changing procedure. According to Pender et al. (2002), decisions are made based on cognitive-perceptual factors including: importance of health, perceived control of health, perceived self-efficacy, personal definition of health, perceived current health status, perceived benefits of health-promoting behaviors, and perceived barriers to health-promoting behaviors. According to Pender, the women in the current study would factor in these elements when determining whether or not to have this surgical intervention. Other factors that influence behavior are social as well as biological and include, health promoting behaviors such as diet and exercise. Pender suggests that patients are more committed to these health promotion behaviors if they have the support from their family and other support networks.

According to Pender (2002), patients choose coronary artery bypass graft surgery for a chance to gain control of their health, for perceived benefits of the surgery, and for increased self-efficacy. They are more likely to engage in these behaviors with the influence of family, peers, and education they have received.

The next theory that encompassed this study was Gender and the Social Construction of Illness (Lorber & Moore, 2002). This study was chosen because it is a feminist theory and this study has only females as subjects. This theory introduces medicine and society as gendered and shaping the illness due to cultural and social norms. Illness is assumed to be a derivation of what is normal and each individual with a specific illness will have the same symptoms, treatment, and healthcare (Lorber et al., 2002). This is not the case with cardiovascular disease, where women are under treated, under recognized, and under researched. In the past, medical research was completed on white middle class men, and then the principles were applied to the entire population. Over time, the medical profession realized that each population had its own unique characteristics and phenomena that needed to be studied, and that gender had a role in the generalizability of the study results.
Limitations

This study had several limitations. First, the overall sample size was very small, with only ten participants. It was anticipated that there would be more women undergoing CABG during the six month data collection period. This study did not include women who had valve replacements, other coronary interventions, or those who had true emergency bypass surgery. This study did not include those who may have had previous CABG surgery. There would have to have been a massive gain or change in quality of life in order to see any statistical significance. Also, the data was collected in only one hospital in the North Florida area. This hospital serves the surrounding five counties but results cannot be generalized to the entire population.

Because the preoperative surveys were completed in the hospital before surgery, the patients may have been experiencing some anxiety related to the procedure and may not have been completely attentive to the survey. Also, because surveys were administered in the hospital setting, patients may have answered in a socially desirable manner instead of how they truly felt. The women had comorbidities which could have affected their QOL thus making it difficult to distinguish coronary artery disease effects as compared to comorbid effects.

Only those who were able to read, write, and understand the English language was asked to participate in the study. This would not allow non-English speaking individuals from participating, thus limiting generalizability. The races of the individuals participating were mostly Caucasian and African American thus limiting external validity.

Implications for Nursing Practice

As healthcare providers, nurse practitioners will encounter many women on a daily basis in the clinical setting and will have opportunities to educate women and perform risk stratification for coronary artery disease. Nurse Practitioners can take this opportunity to emphasize the importance of cardiovascular health in women. Nurse Practitioners need to be knowledgeable about the atypical symptoms of CAD in women, and options for treatment and referral. It is envisioned that practitioners will use this QOL assessment as part of a 2 step counseling session for patients prior to surgery; the first part being the need for modification of cardiovascular risk factors and the second being what to expect regarding their quality of life after surgery. This should help determine who would benefit most from the surgery based on current and expected quality of life. If the women present with a higher quality of life before
surgery it can be expected that they will show improvement after surgery thus indicating a need for earlier referrals. Also those women who are impoverished are less likely to receive healthcare and run a greater risk of late referral, thus increasing the risk of poor surgical outcome. The bottom line is that women need to be referred to a cardiologist earlier in the disease process in order to have a better postsurgical outcome or possibly avoid surgery altogether. Women may fear surgery and what occurs after surgery, but according to the literature, they will have an improved QOL.

**Recommendations for Future Study**

The recommendations for future research are based solely on the fact that in spite of increased awareness regarding women and heart disease, they are not being recognized or treated in a timely manner. For a study similar to this one, the sample size needs to be much larger in order to be able to generalize to a larger population. It was thought that since women’s heart disease is discovered later, there may have been more emergent rather than elective CABG surgery, therefore, it would be necessary to study the emergent cases as well. Another recommendation would be to do further research focused on the different aspects of life and responsibility for women and how that impacts their quality of life. Women tend to have more social and familial responsibilities than men which could in turn affect their quality of life and recovery time.

Since the women in this study were older (mean = 68 years, mode = 77 years), it would be interesting to compare an older versus a younger population of women regarding QOL after CABG. Also with advancing age, women tend to be unpartnered which may have an effect on QOL. Further exploration into the relationship between demographics and QOL may increase understanding of the improvement or lack of improvement in QOL for women undergoing CABG. Further study into the risk stratification for CAD in women may also assist in better understanding and treatment of women with heart disease and the effect on QOL.

**Conclusion**

This study examined the quality of life for women undergoing coronary artery bypass graft surgery at a hospital in Northwest Florida for treatment of coronary artery disease. This study noted that there was a positive effect on quality of life for these women, although the preoperative and postoperative scores were not significantly different. These findings lend support to the suggestion that women should be aware of cardiovascular disease and their options
for treatment, and that quality of life should be taken into account in their decision regarding coronary artery bypass graft surgery. The more patients can empower themselves with knowledge and understanding regarding their health, the more positive effect it will have on their QOL.
APPENDIX A

Short Form Health Survey Questionnaire Version 2 (SF-36)
Your Health and Well-Being

This survey asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities. *Thank you for completing this survey!* 

For each of the following questions, please mark an ✖️ in the one box that best describes your answer.

1. **In general, would you say your health is:**

<table>
<thead>
<tr>
<th>Excellent</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
</tr>
<tr>
<td>□₁</td>
<td>□₂</td>
<td>□₃</td>
<td>□₄</td>
<td>□₅</td>
</tr>
</tbody>
</table>

2. **Compared to one year ago, how would you rate your health in general now?**

<table>
<thead>
<tr>
<th>Much better now than one year ago</th>
<th>Somewhat better now than one year ago</th>
<th>About the same as one year ago</th>
<th>Somewhat worse now than one year ago</th>
<th>Much worse now than one year ago</th>
</tr>
</thead>
<tbody>
<tr>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
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<tr>
<td>□₁</td>
<td>□₂</td>
<td>□₃</td>
<td>□₄</td>
<td>□₅</td>
</tr>
</tbody>
</table>
3. The following questions are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

- **Vigorous activities**, such as running, lifting heavy objects, participating in strenuous sports

- **Moderate activities**, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf

- Lifting or carrying groceries

- Climbing **several flights** of stairs

- Climbing **one flight** of stairs

- Bending, kneeling, or stooping

- Walking **more than a mile**

- Walking **several hundred yards**

- Walking **one hundred yards**

- Bathing or dressing yourself

<table>
<thead>
<tr>
<th></th>
<th>Yes, limited a lot</th>
<th>Yes, limited a little</th>
<th>No, not limited at all</th>
</tr>
</thead>
</table>
4. During **the past 4 weeks**, how much of the time have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

<table>
<thead>
<tr>
<th>All of the time</th>
<th>Most of the time</th>
<th>Some of the time</th>
<th>A little of the time</th>
<th>None of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
</tr>
</tbody>
</table>

- Cut down on the **amount of time** you spent on work or other activities ........................................ □ 1 ........ □ 2 ........ □ 3 ........ □ 4 ........ □ 5
- **Accomplished less** than you would like ................................ □ 1 ........ □ 2 ........ □ 3 ........ □ 4 ........ □ 5
- Were limited in the **kind** of work or other activities ................................................................. □ 1 ........ □ 2 ........ □ 3 ........ □ 4 ........ □ 5
- Had **difficulty** performing the work or other activities (for example, it took extra effort) ........ □ 1 ........ □ 2 ........ □ 3 ........ □ 4 ........ □ 5

5. During **the past 4 weeks**, how much of the time have you had any of the following problems with your work or other regular daily activities as a result of any **emotional problems** (such as feeling depressed or anxious)?

<table>
<thead>
<tr>
<th>All of the time</th>
<th>Most of the time</th>
<th>Some of the time</th>
<th>A little of the time</th>
<th>None of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
</tr>
</tbody>
</table>

- Cut down on the **amount of time** you spent on work or other activities ........................................ □ 1 ........ □ 2 ........ □ 3 ........ □ 4 ........ □ 5
- **Accomplished less** than you would like ................................ □ 1 ........ □ 2 ........ □ 3 ........ □ 4 ........ □ 5
- **Did work or other activities less carefully than usual** ............................................................. □ 1 ........ □ 2 ........ □ 3 ........ □ 4 ........ □ 5

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SF-36® Health Survey © 1996, 2000 by QualityMetric Incorporated and Medical Outcomes Trust. All Rights Reserved. SF-36® is a registered trademark of Medical Outcomes Trust. (SF-36v2 Standard, US Version 2.0)
6. During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Slightly</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
</tr>
<tr>
<td>[ ] 1</td>
<td>[ ] 2</td>
<td>[ ] 3</td>
<td>[ ] 4</td>
<td>[ ] 5</td>
</tr>
</tbody>
</table>

7. How much bodily pain have you had during the past 4 weeks?

<table>
<thead>
<tr>
<th>None</th>
<th>Very mild</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
<th>Very Se</th>
</tr>
</thead>
<tbody>
<tr>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
</tr>
<tr>
<td>[ ] 1</td>
<td>[ ] 2</td>
<td>[ ] 3</td>
<td>[ ] 4</td>
<td>[ ] 5</td>
<td>[ ] 6</td>
</tr>
</tbody>
</table>

8. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>▼</td>
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<tr>
<td>[ ] 1</td>
<td>[ ] 2</td>
<td>[ ] 3</td>
<td>[ ] 4</td>
<td>[ ] 5</td>
</tr>
</tbody>
</table>
9. These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks...

<table>
<thead>
<tr>
<th>All of the time</th>
<th>Most of the time</th>
<th>Some of the time</th>
<th>A little of the time</th>
<th>None of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
</tr>
</tbody>
</table>

a. Did you feel full of life? ........................................... □1 ........ □2 ........ □3 ........ □4 ........ □5

b. Have you been very nervous? ......................................... □1 ........ □2 ........ □3 ........ □4 ........ □5

c. Have you felt so down in the dumps that nothing could cheer you up? ........................................... □1 ........ □2 ........ □3 ........ □4 ........ □5

d. Have you felt calm and peaceful? ................................... □1 ........ □2 ........ □3 ........ □4 ........ □5

e. Did you have a lot of energy? ........................................... □1 ........ □2 ........ □3 ........ □4 ........ □5

f. Have you felt downhearted and depressed? .......................... □1 ........ □2 ........ □3 ........ □4 ........ □5

g. Did you feel worn out? .................................................... □1 ........ □2 ........ □3 ........ □4 ........ □5

h. Have you been happy? ..................................................... □1 ........ □2 ........ □3 ........ □4 ........ □5

i. Did you feel tired? ......................................................... □1 ........ □2 ........ □3 ........ □4 ........ □5

10. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc.)?

<table>
<thead>
<tr>
<th>All of the time</th>
<th>Most of the time</th>
<th>Some of the time</th>
<th>A little of the time</th>
<th>None of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
</tr>
</tbody>
</table>

□1  □2  □3  □4  □5
11. **How TRUE or FALSE is each of the following statements for you?**

<table>
<thead>
<tr>
<th>Definitely true</th>
<th>Mostly true</th>
<th>Don't know</th>
<th>Mostly false</th>
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<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
</tr>
</tbody>
</table>

- I seem to get sick a little easier than other people ........................................... □₁ □₂ □₃ □₄ □₅
- I am as healthy as anybody I know ........ □₁ □₂ □₃ □₄ □₅
- I expect my health to get worse .......... □₁ □₂ □₃ □₄ □₅
- My health is excellent ........................ □₁ □₂ □₃ □₄ □₅

**THANK YOU FOR COMPLETING THESE QUESTIONS!**
APPENDIX B

Informed Consent for Adults

A Comparison of the Quality of Life for women pre and post Coronary Artery Bypass Graft (CABG) Surgery

I HAVE BEEN INFORMED THAT:

Marzsa Neff, who is a Registered Nurse and graduate student at The Florida State University, has requested my participation in a research study at this institution.

The purpose of the research is to acknowledge women and cardiovascular disease, and the implications for quality of life. The main focus is to determine if there is an improvement in a woman’s quality of life from pre to post coronary artery bypass graft surgery. Research is lacking in this area. Historically, coronary artery disease was thought to be a disease of men with women often being overlooked. This research will be used to assess the impact of cardiac disease and cardiovascular surgery in women.

The subjects included in this research study are female of all ages and ethnicity, who are able to read and write in English. Approximately 40 subjects are needed for the study. The data will be collected from the Northwest region of Florida.

My participation in this study will be voluntary and will involve completing two quality of life surveys. One survey is to be completed prior to open heart surgery and the second survey is to be completed three months after surgery. There will be a requested time of two weeks for the completion and return of the postoperative surveys. This is a non-experimental research study and only the quality of life scores and demographic information will be collected. Nonparticipation or withdrawal from the study will not affect treatment or care.

There are no foreseeable risks or discomforts to me if I agree to participate in the study. Participating in this study will not change the normal care you receive from the healthcare providers. You may withdraw from the study at any time without prejudicing your present or future care.

Although there may be no direct benefits to me, the possible benefits of my participation in this research study are to learn more about women and heart disease, be aware of the impact of cardiovascular disease in women, and to help medical and nursing professionals care for women undergoing coronary artery bypass graft surgery.

The results of this research study may be published but my name or identity will not be revealed, to the extent allowed by law. In order to maintain confidentiality, the researcher, Marzsa Neff, will use subject codes and pair up the surveys from pre and postoperative periods. The identifiable information or master list will be destroyed after assigning the subject codes. The only persons who will have access to the data are Marzsa Neff, researcher and Dr. Laurie
Grubbs, Research Chair person. The surveys will be kept in a locked box at the researcher’s home office.

I will not be paid for my participation. There will be no cost to you for participation in this study, there will be no cost to your insurance company, nor will there be compensation of any kind. Additionally, the investigator will not receive any compensation for conducting this research study.

Any questions I have regarding the research study or my participation in it, before or after my consent will be answered by Marzsa Neff at 3132 Hotchkiss Lane Tallahassee, Florida 32303, 850-504-9645, or Marzsa99@hotmail.com or Dr. Laurie Grubbs at 850-644-5363 or lgrubbs@nursing.fsu.edu.

If I have questions about my rights as a subject/participant in this research, or if I feel I have been placed at risk, I can contact the Chair of the Human Subjects Committee, Institutional Review Board, through the Office of the Vice President for research at 850-644-8633.

The nature, demands, benefits and any risk of the project have been explained to me. I knowingly assume any risks involved.

I have read the above informed consent form. I understand that I may withdraw my consent and discontinue my participation at any time without penalty or loss of benefits to which I may otherwise be entitled. In signing this consent form, I am not waiving any legal claims, rights, or remedies. A copy of this consent form will be offered to me.

Signature _________________________________ Date ____________________

Signature of Witness _________________________________ Date _________________
### Demographic Data Sheet
#### Preoperative Questionnaire

1. What is your age in years:  
   ____ years

2. What is your weight in pounds:  
   ____ lbs

3. What is your height in feet and inches:  
   ____ ft. ____ in.

4. Are you:  
   (Select one)  
   ___ White, non-Hispanic  
   ___ African American  
   ___ Hispanic  
   ___ Asian  
   ___ other, please specify:  
   ______________________________________

5. What is your marital status:  
   (Select one)  
   ___ Single  
   ___ Married  
   ___ Divorced  
   ___ Widowed

6. How many years of education:  
   (Specify in numbers)  
   ___ Elementary  
   ___ High School  
   ___ College  
   ___ Technical Institute

7. What is your total family income per year:  
   (Select one)  
   ___ less than $25,000  
   ___ $25,000-$50,000  
   ___ $50,000-$75,000  
   ___ $75,000-$100,000  
   ___ greater than $100,000

8. Do you work:  
   ___ yes  
   ___ no

9. If you work what is your occupation:  
   ______________________________________

10. If you work, do you work:  
    ___ part time  
    ___ full time

11. Besides cardiac disease, do you have  
    ___ no
any other chronic illnesses/diseases:  ____ yes (if so, please specify)  
________________________________________________________________________

12. Did you use now or have you ever used any form of tobacco product:  
___ yes  
___ no  

13. If yes, what kind:  
___ cigarettes  
___ packs per day  
___ cigars  
___ number per day  
___ chewing tobacco  
___ packages per day  

14. Did you use any form of alcohol:  
___ yes  
___ no  

15. If so, how much:  
________________________________________________________________________

16. What do your family responsibilities include:  
___ care of an elderly parent or relative  
___ care of a spouse  
___ care of a child  
___ care of a grandchild  
___ other, please explain  

________________________________________________________________________

Address:  _______________________________________________________________
_______________________________________________________________________

Subject Code # _____
APPENDIX D

Postoperative Demographic Questionnaire

Demographic Data Sheet
Postoperative Questionnaire

1. Did you attend cardiac rehabilitation classes after surgery:  
   ____ yes  
   ____ no

2. If you did attend rehabilitation classes after surgery, for how long and where:  
   ____________  
   ____________

3. Do you currently use any form of tobacco products:  
   ____ yes  
   ____ no

4. If yes, What kind:  
   ____ cigarettes  
   ____ packs per day  
   ____ cigars  
   ____ number per day  
   ____ chewing tobacco  
   ____ packages per day

5. Do you currently use any form of alcohol:  
   ____ yes  
   ____ no

6. If you currently use alcohol how much:  
   ____________

7. Do you work: If Yes, how much  
   ____ Part time  
   ____ Full time

8. What type of work do you do:  
   ____________________________________________________________________  
   ____________________________________________________________________  
   ____________________________________________________________________  
   ____________________________________________________________________

9. If you would like to share your story with cardiovascular disease please do so below:  
   ____________________________________________________________________  
   ____________________________________________________________________  
   ____________________________________________________________________  
   ____________________________________________________________________  
   ____________________________________________________________________  
   ____________________________________________________________________

Subject Code # ______

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APPENDIX E

The Florida State University Institutional Review Board Approval Letter

Florida State University
Office of the Vice President For Research Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8633 . FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 5/25/2006

To: Marzsa Ardithe Neff
3132 Hotchkiss Lane
Tallahassee, FL 32303

From: Thomas L. Jacobson, Chair
Dept: Nursing

Use of Human Subjects in Research
A Comparison of the Quality of Life for a convenience sample of women pre and post Coronary Artery Bypass Graft (CABG) Surgery

Re: The forms that you submitted to this office in regard to the use of human subjects in the proposal referenced above have been reviewed by the Human Subjects Committee at its meeting on 4/26/2006. Your project was approved by the Committee.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals which may be required.

If the project has not been completed by 4/25/2007 you must request renewed approval for continuation of the project.

You are advised that any change in protocol in this project must be approved by resubmission of the project to the Committee for approval. The principal investigator must promptly report, in writing, any unexpected problems causing risks to research subjects or others.

By copy of this memorandum, the chairman of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols of such investigations as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Protection from Research Risks. The Assurance Number is IRB00000446.

cc: Laurie Grubbs
HSC No. 2006.0338
APPENDIX F

Tallahassee Memorial HealthCare Institutional Review Board Approval Letter
Marzsa Neff, MSN, RN  
3132 Hotchkiss Lane  
Tallahassee, FL 32303

Dear Ms. Neff:

Your study IRB # 2006-22 Title: A Comparison of the Quality of Life for a Convenience Sample of Women Pre and Post Coronary Artery Bypass Graft (CABG) Surgery met the criteria for an Expedited Review. Larry C. Deeb, M.D., Tallahassee Memorial HealthCare (TMH) Institutional Review Board (IRB) Chairperson reviewed and approved the study on July 25, 2006 for one year. The expiration date of this approval is July 24, 2007.

IRB # 2006-22

Principal Investigator: MarzsaNeff, MSN, RN
Informed Consent: Version - July 25,2006 Approved as is 1) You will need to request approval before making any amendments to the informed consent and prior to implementing them; 2) Report to the IRB any planned change in the study or study protocol and do not implement any change without receiving prior approval, except to eliminate immediate hazard; 3) Report to the IRB any unanticipated problems involving risks to subjects; 4) Report to the IRB any new information on the project that adversely influences the risk/benefit ratio; 5) Report to the IRB any adverse events (AE).

Reporting Requirements:

Member of the Voluntary Hospitals of America (VHA) System
Supplemental Reporting Requirements: None
Expiration Date: July 31, 2006
Continuation Review Date: July 24, 2007
Continuation Review Requirements: The investigator must apply for continuation review and approval one month prior to this expiration date.
Study Closure/Completion Summary: Submit completed or closed studies with a completed Study Closure Form and summary of the study for full Board review.

The approved IRB forms necessary to comply with the Reporting Requirements were emailed to you. They are:

- Serious Adverse Event Reports - Internal
- Study Closure Form
- Continuation Review (Application for Renewal)
- Human Resources School Advisory Letter
- Amendment Requests Prior to Scheduled Continuation Review

The IRB approved stamped Informed Consent and the signed Expedited Review is enclosed. If you have any questions about the forms or submitting them, please feel free to contact me or Mary Sandell at (850) 431-5676.

Sincerely,

Cynthia Blair
Administrative Liaison/IRB

Enclosure: IRB Approved Stamped Informed Consent
          Expedited Review
To Whom It May Concern:

I am a graduate student under the direction of Professor Dr. Laurie Grubbs in the School of Nursing at The Florida State University. I am conducting a research study to acknowledge women and cardiovascular disease, and the implications for quality of life. Also to determine if a woman’s quality of life is improved after their coronary artery bypass graft surgery as compared to their pre operative quality of life state.

I am requesting your participation, which will involve completing two quality of life surveys. One survey to be completed prior to open heart surgery and the second survey to be completed one month after surgery. You will also be giving your permission to be contacted via mail for the postoperative survey. This is a non experimental research study and only the quality of life scores and demographic information will be collected. Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, there will be no penalty and will not affect your treatment or care. The results of the research study may be published, but your name will not be used. The questionnaire is anonymous.

If you have any questions concerning the research study, please call me Marzsa Neff at 850-504-9645 or e-mail at Marzsa99@hotmail.com or Dr. Laurie Grubbs at 850-644-5363 or e-mail at lgrubbs@nursing.fsu.edu.

Sincerely,

Marzsa Neff RN
APPENDIX H

Health Insurance Privacy & Portability Act Authorization Form

Research Subject Authorization
Confidentiality & Privacy Rights

Protocol Title: A Comparison of the Quality of Life for women pre and post Coronary Artery Bypass Graft (CABG) Surgery

Principal Investigator: Marzsa Neff RN, BSN
(850) 504-9645
3132 Hotchkiss Lane, Tallahassee, Florida 32303
Marzsa99@hotmail.com

You have agreed to participate in the research Study mentioned above and have signed a separate informed consent that explained the procedures of the research Study and the confidentiality of your personal health information. This authorization form gives more detailed information about the following:

- What personal health information about you will be collected in this Study
- Who will use your information within the institution and why
- Who may disclose your information and to whom
- Your right to withdraw your authorization (approval) for any future use of your personal health information

By signing this document you are permitting your doctors and other health care providers, including case managers to disclose personal health information collected about you to Florida State University and the researcher listed above for purposes of the Study. You are also allowing Florida State University and the researcher to disclose that personal health information to outside organizations or people involved with the processing of this Study, as described in the separate informed consent form.

What personal information is collected and used in this Study, and might also be shared (disclosed)?
The following personal contact and personal health information will be collected, used for this research Study and may be disclosed or released during your involvement with this research Study:

- Name
- Address
- Telephone number
- Medical history
- Allergies
- Current and past medications or therapies

Why is your personal information being used?
Your personal contact information is important for Florida State University research team to contact you during and after the Study. Your personal health information (including the results of tests and procedures) is being collected during this research Study for purposes of the Study.
Who within Florida State University may use or disclose your personal health information?

The following individuals and organizations within Florida State University may use or disclose your personal health information for this research project:

- The Principal Investigator and the Investigator’s Study team (other University staff associated with the Study)
- The Florida State University Institutional Review Boards (the committees charged with overseeing research on human subjects)
- The Florida State University Office for the Protection of Research Subjects (the office which monitors research studies)

Can you change your mind?

You may withdraw your permission for the use and disclosure of any of your personal information for research, **but you must do so in writing** to the Principal Investigator at the address on the first page. Even if you withdraw your permission, the Principal Investigator for the research Study may still use your personal information that was collected prior to your withdrawal of permission if that information is necessary to the integrity of the Study. If you withdraw your permission to use your personal health information that means you will also be withdrawn from the research Study.

*You are not required to sign this authorization. If you decide not to sign the authorization:*

*It will not affect your treatment by health care providers, or the payment or enrollment in any health plans, or affect your eligibility for benefits. However, you may not be allowed to participate in the research Study.*

You will be given a copy of this Research Subject Authorization Form describing your confidentiality and privacy rights for this Study.

By signing this document you are permitting your doctors and other health care providers to disclose your personal health information to Florida State University and permitting Florida State University to use and disclose personal health information collected about you for research purposes as described above.

<table>
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<th>Subject’s Name [print]</th>
<th>Subject’s Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person obtaining authorization [print]</td>
<td>Person obtaining authorization Signature</td>
<td>Date</td>
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</tbody>
</table>
APPENDIX I

Proposal Letter to Tallahassee Memorial HealthCare

Tallahassee Memorial Healthcare, Inc.
Institutional Review Board
Tallahassee, Florida

To Whom It May Concern:

Subject: Submission to the Tallahassee Memorial Healthcare Institutional Review Board

This letter is concerning the submission and approval of my thesis titled: *A Comparison of the Quality of Life for women pre and post Coronary Artery Bypass Graft (CABG) Surgery.*

Dept.: NURSING

*Use of Human Subjects in Research*

*A Comparison of the Quality of Life for a convenience sample of women pre and post Coronary Artery Bypass Graft (CABG) Surgery*

A graduate nursing student at The Florida State University working on my Master’s in Nursing to become an Advanced Registered Nurse Practitioner. I have already received approval from the Florida State University Institutional Review Board and I am requesting expedited review from the Institutional Review Board for my study from the Tallahassee Memorial Hospital Institutional Review Board.

The IRB protocol will encompass an overview of the study, the study procedure, study subjects, instrumentation, study statistics, risks, confidentiality, benefits, costs, informed consent, and funding involved in the study.

Thank you for your time and consideration in this matter. Any questions or concerns I can be reached via e-mail at Marzsa99@hotmail.com, at home (850) 504-9645, or my cell (863) 651-4116.

Sincerely,

Marzsa Neff RN, BSN
The Florida State University School of Nursing
APPENDIX J

Protocol for Submission to Tallahassee Memorial HealthCare

Tallahassee Memorial Healthcare, Inc.

Unit Information

A Comparison of the Quality of Life for women pre and post Coronary Artery Bypass Graft (CABG) Surgery

Study Summary:
Cardiovascular disease is among the leading cause of death for both men and women in the United States. According to the National Institutes of Health (NIH) approximately 13 million people have CAD in the United States. Historically, CVD was thought to be a man’s disease with women often being overlooked. Although CVD is more prevalent in men at a younger age, after the age of seventy-five it becomes more prevalent in women (Baldsasarre, Arthur, DiCenso, & Guyatt, 2002). Cardiovascular disease has decreased in American men over the years, but the incidence has increased in American women (Fox & Nussmeier, 2004). The research is lacking regarding women and CAD, their symptoms, clinical significance and post CABG outcomes both physical and quality of life (QOL). It is important to compare women’s QOL pre and post CABG surgery in order to determine factors that influence their QOL. The opportunity for improved QOL should be a factor in the healthcare provider’s decision to recommend the CABG procedure. The purpose of this study is to acknowledge women and cardiovascular disease, and the implications for QOL. Currently there is no QOL assessment completed prior to or after surgery in either the hospital or physician offices. These settings serve all of the cardiothoracic surgeries in the surrounding five counties in the North Florida area and serve all types of people from different cultures, socioeconomic backgrounds, ages, and gender.

Study Procedures:
This is a non-experimental, descriptive, and explorative study. This study by definition is non-experimental because no intervention is introduced when the data is collected and it is not randomized, but rather a convenience sample is taken. This study will be descriptive in nature because it will attempt to accurately portray characteristics of people and situations and to what frequency specific phenomena occur (Polit & Beck, 2004). This study will be conducted at Tallahassee Memorial Healthcare, a not for profit hospital in North Florida. The patient care staff in the units where the patients will be recruited will be educated about women and heart disease and this study in detail. They will be taught the statistics of women and heart disease, the implications for this study, the procedure of this study, and what subjects will fulfill the inclusion criteria. There will be a copy of this protocol at each of the nurses’ stations along with a flyer to advertise the study (Appendix A). Case Managers from the participating cardiac units have been contacted regarding their willingness to assist in data collection. Permission to utilize the Case Managers in this capacity will be obtained from Ann Smith or Karen McCants. An information sheet will be provided to the Case Managers that will describe the study in detail (Appendix B). After admission to the cardiac unit at Tallahassee Memorial Healthcare, patients will be contacted by the Case Manager for cardiac services to explain the details of the study and request
their participation. The case manager will receive a script that will assist her in communicating the intent of the study (Appendix C). If the patient is willing to participate, the Case Manager will obtain the informed consent (Appendix D) and in order to protect the privacy of the patient and comply with the HIPAA regulations (45CFR164.508) the recruiters will also obtain an authorization form that will give the recruiters the permission to share the data collected with the researcher (Appendix E). They will then administer the demographic and QOL questionnaires (Appendix F & G) which should take approximately 15 minutes to complete. Once completed, the Case Manager will collect the survey and place it in a locked drawer in her office to which only the researcher and Case Manager will have access. All of the patients participating in the study will have the CABG procedure in the hospital. For the postoperative assessment of QOL the participants will be asked to provide their address so that they can be contacted via mail for the postoperative survey. Along with the postoperative SF-36 questionnaire, there will be an additional demographic sheet to fill out as well (Appendix H).

**Study Subjects:**

The inclusion criteria are women of any age that are having an elective coronary artery bypass graft surgery who speak primarily the English language, and are able to read and write. The population of women was chosen due to the lack of research involving women and cardiac disease. English speaking patients were chosen due to problems with translation of other languages. The exclusion criteria are males and children. Approximately 30-40 subjects are needed for this study. Verbal permission to approach elective CABG patients will be obtained from the cardiothoracic surgeons associated with TMH. The case managers of the cardiac services will have access to the patients that will be having the surgery and have agreed to make the contact and distribute the survey. Subjects are consenting to participate on a voluntary basis and will not be penalized for discontinuing their participation at any time. If the subject’s participation is ended prematurely, there will be no effect on treatment or care. There will be no cost for participation in this study, there will be no cost to insurance companies, nor will there be compensation of any kind. Additionally, the investigator will not receive any compensation for conducting this research study.

**Instruments:**

The instrument used throughout this study is titled the Short Form 36 Health Survey (Appendix D) that deals with answering questions based on a likert scale. The survey was developed at the Rand Corporation of America for use in the Health Insurance Study Experiment/Medical Outcomes (1993). It is a short generic measure of subjective health status that could be applied to a wide range of studies. This is a self-administered survey that should take approximately 5-15 minutes to complete. The reliability of the items ranges from 0.43-0.90 with high validity values as well. This instrument has been used in several studies that interpret Quality of Life.

**Study Statistics:**

The primary outcome is the comparison of the measures of preoperative and postoperative quality of life using the 36-item QOL survey (The Short Form 36 Health Survey). Selected non-parametric statistics will be used in analysis. There will also be simple descriptive statistics that compare and analyze the demographic data. There is a need for approximately 30-40 subjects for the study to be significant statistically. There may be an inability to contact some
patients after surgery due to unexpected circumstances and this has been taken into consideration.

**Risks:**
There are no foreseeable risks involved in the participation of this study. There are no financial risks associated with this study. Any adverse events that may occur during the duration of this study will be reported to the Institutional Review Board and appropriate referrals will be made for the patient.

**Confidentiality:**
The QOL surveys will be identified only by number. The demographic data will be paired with the patient name and number only until the post-op surveys have been collected and entered. Once the postoperative surveys have been complete then the identifying information will be destroyed. All of the data collected will be kept until 2010 and then shredded accordingly. They will be stored in a locked drawer in the research chair’s office.

**Benefits:**
There will be no direct benefit to the participants. The thought is that the participants will gain insight into cardiovascular disease and women and be able to use the information and apply it to their lives. The benefits to Tallahassee Memorial Hospital include using the findings to develop a quality of life tool prior to surgery, to advertise about women and cardiovascular disease, and to be more insightful about the effects of coronary artery bypass graft surgery and women. It is hoped that the information will also help healthcare providers in discussing the risks and benefits of CABG on QOL.

**Costs:**
Tallahassee Memorial Hospital will not incur any incremental cost or consumption of resources to participate in the study and TMH will not receive any payments for its participation in the study.

**Informed Consent:**
An informed consent has been completed for adult participants that are eligible to participate. See attached informed consent in Appendix C.

**Funding:**
There is no potential funding sources for this study.

**Researcher’s Name:** Marzsa Ardithe Neff RN School of Nursing
Research conducted by: Marzsa Neff RN, BSN

Quality of life (QOL) of women pre and post Coronary Artery Bypass Graft Surgery

- According to the National Institutes of Health (NIH) approximately 13 million people have CAD in the United States
- Although CVD is more prevalent in men at a younger age, after the age of seventy-five it becomes more prevalent in women
- Women of any age that are having an elective coronary artery bypass graft surgery are invited to be in this study
- The purpose of this study is to acknowledge women and cardiovascular disease, and the implications for QOL.
Obtaining Informed Consent

Hi, my name is _____________________, I am a ________________ for the cardiac services here at Tallahassee Memorial Hospital. Marzsa Neff is a graduate nursing student at The Florida State University. She is conducting a study with women and cardiovascular disease, specifically those women who will undergo coronary artery bypass graft surgery. Her study consists of answering a demographic questionnaire and a Quality of Life questionnaire. The whole process should take approximately 15-20 minutes. She will be comparing your Quality of Life before surgery to your Quality of Life after surgery. In order to do so, she would like your permission to give her your address so that she can contact you after surgery to answer the same questionnaire for comparison. Also, I would like your permission to pass this information along to her so that she can collect her data.

I have an informed consent for you to read, and if you agree you can sign to take part in this study.

(Have the patient’s read the informed consent and fill out the demographic questionnaire and the Quality of Life survey)

Marzsa will be contacting you by mail to complete the second survey; you should be expecting it about one month after your surgery.

Marzsa would like to send you her kindest regards for participating in her study and being part of her learning experience, as she becomes an Advanced Registered Nurse Practitioner.

Thank you again for your time
### APPENDIX M

**Data**

**List**

[DataSet1] C:\student clients\marzsa neff\combined.sav

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**List**

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Number of cases read: 10    Number of cases listed: 10

**List**

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Number of cases read: 10 Number of cases listed: 10
C        32.96     37.61    4.65        40.06     43.40    3.34
D        37.18     32.96   -4.22        25.76     37.68   11.92
E        24.08     29.15    5.07        48.17     45.78  -2.39
F        41.41     42.68    1.27        43.40     45.78    2.38
G        37.18     32.96   -4.22        50.55     28.15  -22.40
H        41.41     41.41     .00        30.53     41.02   10.49
I        46.06     37.18   -8.88        45.78     48.17    2.39
J        32.96     37.18    4.22        57.70     44.83  -12.87

Number of cases read: 10    Number of cases listed: 10

list pid pr_VT_nbs po_VT_nbs d_VT_nbs pr_SF_nbs po_SF_nbs d_SF_nbs.

List

[DataSet1] C:\student clients\marzsa neff\combined.sav

pid   pr_VT_NBS po_VT_NBS d_VT_NBS   pr_SF_NBS po_SF_NBS d_SF_NBS
A     30.24     42.72   12.48        40.49     35.03   -5.46
B     39.60       .       .          35.03       .       .
C     48.97     42.72   -6.25        35.03     35.03     .00
D     45.85     42.72   -3.13        24.13     24.13     .00
E     70.82     64.58   -6.24        45.94     45.94     .00
F     52.09     52.09     .00        56.85     45.94  -10.91
G     30.24     39.60    9.36        29.58     18.67  -10.91
H     30.24     39.60    9.36        29.58     18.67  -10.91
I     48.97     48.97     .00        35.03     45.94   10.91
J     30.24     20.87   -9.37        40.49     18.67  -21.82

Number of cases read: 10    Number of cases listed: 10

list pid pr_RE_nbs po_RE_nbs d_RE_nbs pr_MH_nbs po_MH_nbs d_MH_nbs.

List

[DataSet1] C:\student clients\marzsa neff\combined.sav

pid   pr_RE_NBS po_RE_NBS d_RE_NBS   pr_MH_NBS po_MH_NBS d_MH_NBS
A     20.89     32.56   11.67        50.01     33.11  -16.90
B     36.44       .       .          47.19       .       .
C     55.88     44.22  -11.66        61.27     52.82   -8.45
D     13.12      9.23   -3.89        30.30     33.11    2.81
E     20.89     24.78    3.89        44.38     41.56  -2.82
F     55.88     32.56  -23.32        50.01     52.82    2.81
G     24.78     40.33  15.55        34.74     44.38    5.64
H     44.22     44.22     .00        44.38     38.74  -5.64
I     55.88     55.88     .00        58.46     41.56  -16.90
J     28.67     20.89   -7.78        44.38     38.74  -5.64

Number of cases read: 10    Number of cases listed: 10

compute d_total=post-pre.
compute d_total_nbs=post_nbs-pre_nbs.

list pid pre post d_total pre_nbs post_nbs d_total_nbs.

List

[DataSet1] C:\student clients\marzza neff\combined.sav

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Number of cases read: 10  Number of cases listed: 10
### APPENDIX N

**Data: Subscales vs. U.S. Norms**

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*females in the U.S. norm base in the specific age categories compared to the sample*
REFERENCES


Rankin, Sally H, Butzlaff, Alice; Carroll, Diane, Reedy, Imelda. (2005). Famished for support recovering elders after cardiac events. *Clinical Nurse Specialist*. 19(3). Lippincott Williams & Wilkins, Inc.


Ware, John; Kosinski, Mark; Dewey, James. (2002). *How to score Version 2 of the SF-36 health Survey (standard and acute forms).* Medical Outcomes Trust and Quality Metric Incorporated.

BIOGRAPHICAL SKETCH
Marzsa A. Neff, RN, BSN

Date of Birth: October 4, 1979

Birthplace: Winter Haven, Florida

Education:

Bachelor of Science in Nursing, December 2004, The Florida State University
President, FSU Student Nurses Association
1st Vice President, FSU Student Nurses Association
Member, Florida Nurses Association

Master of Science in Nursing, to be awarded April 2007, The Florida State University
Sigma Theta Tau Inductee
Member, Florida Nurses Association

Certifications:

State of Florida Registered Nurse

Advanced Cardiac Life Support

Professional Experience:

Tallahassee Memorial HealthCare, Cardiac Progressive Care Unit
Liaison, ICD Support Group
Committee Member, Shared Governance-Research
Committee Member, Open heart
Member, American Association of Critical Care Nurses

Southern Medical Group, Cardiology-Electrophysiology