ABSTRACT

PERCEPTION OF GENERAL HEALTH AND SELF-EFFICACY FOR THE CORONARY ARTERY BYPASS GRAFT PATIENT

By Sandra Schaffer

The purpose of this study was to examine the relationship between perception of general health and self-efficacy in the coronary artery bypass graft (CABG) patient. Following CABG, risk factor modification and adoption of new health behaviors can be difficult. Because self-efficacy is strongly related to behavioral intentions and behavioral change, understanding what factors impact self-efficacy is important. The research question for this study was: What is the relationship between perception of general health and self-efficacy in the CABG patient?

The theoretical framework for this study is Bandura's Social Cognitive Theory. Self-efficacy is a key element of the Social Cognitive Theory where emphasis is placed on the beliefs about abilities to execute an action rather than the skills possessed.

A non-experimental, ex post factor, correlational design was used to conduct this study. A non-probability, convenience sample consisted of 776 adults who had undergone CABG theory and participated in a cardiac rehabilitation program in Wisconsin.

Data collection instruments used were: (a) W2eBOP Individual Patient Outcomes-Phase II, (b) Short-Form 36-Item Health Survey, and (c) Modified Cardiac Self-Efficacy Tool. Data were analyzed using Pearson's r and descriptive statistics. Alpha was set at .05.

This study demonstrated a highly statistically significant relationship between pretest general health (GH) and posttest self-efficacy controlling symptoms (SE-CS) ($r = .289$ [$p < .000$]). Even after age, pre SE-CS and gender were controlled for, the relationship between variables remained statistically significant ($r = .1283$ [$p < .000$]).

In this sample of 776 CABG patients, a highly significant relationship was demonstrated between pre GH and post SE-CS. By providing expert medical care, individualized health education and positive feedback regarding health status, the advanced practice nurse is in a key position to help positively influence GH for the CABG patient. As the GH increases, the SE-CS increases and better quality of life is obtained for the CABG patient. Referrals to cardiac rehabilitation should be included in the care of all CABG patients and new interventions to enhance GH should be pursued.

PERCEPTION OF GENERAL HEALTH AND SELF-EFFICACY FOR THE CORONARY ARTERY BYPASS GRAFT PATIENT

by

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This paper is dedicated to the people in my life who supported me as I worked to fulfill this dream that God had laid on my heart. To my parents, who always believed in me and encouraged me to pursue my dreams. From childhood on your taught me to love the Lord and that with Him, all things were possible. How blessed I've been to have you as my parents. To my sister, Nancy, who walked alongside me on this journey. you were always there when I needed a friend to support me or a big sister to laugh or cry with. I treasure the gift of you in my life. To my incredible children, Philip and Rebecca, who allowed me quiet time to study and understood when I had to do homework versus doing something fun. From now until forever, I will love you both "bigger than the moon." And finally, to my husband, Phil. The journey was long and hard and yet you stood by me. You will never know the debt of gratitude and respect I have for you for allowing me to pursue this dream. Through it all you have been my stronghold, my best friend, and you will always be the love of my life. I love you, Phil.

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CHAPTER I

INTRODUCTION

Coronary heart disease (CHD) affects an estimated 15,800,000 American adults, accounting for more than one-half of all cardiovascular events. Coronary heart disease was responsible for one in five deaths in 2004 and is the single leading killer of men and women in the U.S. (American Heart Association [AHA], 2004). According to the AHA, the estimated cost of CHD for 2007 will be $151.6 billion.

Coronary heart disease results from atherosclerosis, which is a narrowing of the coronary arteries due to plaque buildup within the arterial wall. If left untreated, atherosclerosis can lead to hypertension, angina, myocardial infarction and even death. Coronary artery bypass grafting (CABG) is a surgical procedure using the patient's own venous or arterial blood vessels or synthetic grafts to bypass coronary arteries that are occluded 70% or more. Although surgical treatment alone does not appear to affect a lifespan, CABG does improve quality of life for most adults (Ignatavicius & Workman, 2002). In 2004, an estimated 427,000 CABG surgeries were performed (AHA, 2004).

Modification of cardiac risk factors following CABG is a necessary part of CHD management and involves changing or modifying health behaviors. Such modifications may include smoking cessation, weight loss, changing dietary habits, regular exercise, and taking medications. Adhering to these health behaviors following CABG can be challenging, but nonadherence can result in decreased quality of life, future coronary events and even death (Ignatavicius & Workman, 2002).

Bandura (1995) theorized that physiological status can influence judgments about personal abilities. According to Bandura's Social Cognitive Theory, increasing

physical status is one way to create or strengthen self-efficacy—the ability to organize and execute the courses of action necessary to manage prospective situations. Self-efficacy can affect how people think, feel, motivate themselves and act in relation to any given situation (Bandura). Many studies show how self-efficacy can play a significant role in the ability to change and adopt a valued health behavior. Self-efficacy has been demonstrated to be a strong predictor of adherence behavior for increasing exercise, decreasing stress (Barnason, Zimmerman, Nieveen, Schmaderer, Carranza & Reilly, 2003), dieting (Schroeder & Schwarzer, 2005), smoking cessation (Chouinard & Robichaud-Ekstrand, 2007) and limiting alcohol consumption (Schweitzer, Head & Dwyer, 2007).

Health-related quality of life (HRQL) indicators and general health concepts have been widely studied for the CABG patient (Hunt, Hendrata & Myles, 2000; Lyndsay, Hanlon, Smith & Belcher, 2000; Schroter & Lamping, 2005). Perception of general health is one of the concepts included in the research. These studies repeatedly demonstrate increased perception of general health following CABG surgery.

Two factors that affect scores for perception of general health are preoperative health and gender. For example, in a study by Rumsfeld, Magid, O'Brien, McCarthy, MaWhinney and Shroyer (2001), patients with preoperative health status deficits were much more likely to show improvement than those who had relatively good preoperative health. Women have repeatedly demonstrated poorer perception of general health following CABG surgery than have men (Failde, Ramos, Fernandez-Palacin & Gonzalez-Pinto, 2006; Gjero, Wahba, Klepstad, Lydersen & Stenseth, 2005; Vaccarino, Lin, Kasl, Mattera, Roumanis, Abramson & Krumholz, 2003).

For the CABG patient, research specifically addressing how perception of general health relates to self-efficacy is lacking. Since there is little known research that addresses this relationship, the current study investigated this relationship.

Significance to Primary Health Care Nursing

For years the advanced practice nurse (APN) has provided follow-up care for the CABG patient. In order to maximize the potential for providing the CABG patient with the best quality care, any reasonable effort or action the APN can take to support risk factor modification and improve quality of life for this population should be incorporated into their care.

Lenz and Shortridge-Baggett (2002) stated that what people believe about their illness and how they interpret their symptoms will influence their self-efficacy to deal with their illness. The APN is in a key position to help positively affect patients' beliefs about their health and their interpretations of their symptoms. Along with providing expert medical care post-CABG, the APN can encourage CABG patients in their recovery by providing positive feedback about their medical status to help increase their perception of their general health. As symptoms are better managed, enhanced independence results in increased quality of life.

Purpose of the Study

The purpose of the study was to examine the relationship between perception of general health and self-efficacy in the CABG patient.

Research Question

What is the relationship between perception of general health and self-efficacy in the CABG patient?

Definitions of Terms

Conceptual Definitions

Perception of general health: A personal evaluation of health, including current health, health outlook and resistance to illness (McHorney, Ware, Rogers, Raczek & Lu, 1992).

Self-efficacy: The belief in one's abilities to organize and execute the courses of action required to manage prospective situations (Bandura, 1996). Self-efficacy is not concerned with the skills one has but with the judgments of what one can do with whatever skills one possesses (Bandura).

Coronary artery bypass graft patient: An adult patient who undergoes surgical myocardial revascularization surgery, providing a new source of blood supply to the proximal aorta via internal mammary arteries or saphaneous vein grafts to the native coronary arteries that are beyond the arteriosclerotic obstruction. This surgery helps prevent myocardial injury or infarction and/or relieves symptoms (Everson, 1999).

Operational Definitions

Perception of general health: Perception of general health was measured in this study by the attributes of general health in the Short Form 36-Item Health Survey (SF-36) (Ware & Sherbourne, 1992).

Self-efficacy: Self-efficacy was measured in this study by the right attributes of self-efficacy-controlling symptoms (SE-CS) in the Modified Cardiac Self-Efficacy Tool

(MCSET) (Sullivan, LaCroix, Russo & Kayton, 1998). These attributes include self-confidence to control heart pain, control breathlessness, know when to call or visit the doctor, make the doctor understand the concerns about the heart, take medications as prescribed, know how much physical exercise is good, and, if indicated, lose weight, stop smoking and change diet.

Coronary artery bypass graft patient: A CABG patient is any male or female adult, 18 years or older, who has undergone CABG surgery and has completed 8 to 12 weeks of outpatient cardiac rehabilitation in a hospital in Wisconsin after being discharged from the hospital.

Assumptions

1. For most individuals, perception of general health is initially decreased following CABG surgery.
2. Self-efficacy to control symptoms translates into increased confidence levels for the CABG patient to change health behaviors.
3. Research sites distributed questionnaires consistent with the Wisconsin Web-Based Outcomes Project (W2eBOP) instructions.
4. Research instruments in the study (SF-36 and MCSET) validly measure the variables of interest.
5. Adults who have completed the questionnaires answered them truthfully.

Summary

With the increasing number of CABG surgeries, the need for best care practices for CABG patients during their recovery is paramount. For most CABG patients, the

health behavior modifications expected following surgery not only are unfamiliar but also often difficult to follow. Self-efficacy has been shown to be a strong indicator of success for health behavior modifications such as those expected of the CABG patient. This study looked at the relationship between perception of general health and self-efficacy. The APN can use the results of the current study to improve quality of life for the CABG patient.

CHAPTER II

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

The purpose of this study was to examine the relationship between perception of general health and self-efficacy in the CABG patient. In this chapter the theoretical framework and a review of the literature including research on perception of general health, self-efficacy and CABG surgery are presented.

Theoretical Framework

The theory of self-efficacy evolved as a means of understanding and influencing behavioral change for all types of behaviors, including those related to health and wellness promotion. In 1986, Bandura, a clinical psychologist, conceptualized self-efficacy. Since he believed cognitive thought was a key missing element not found in other social theories, he developed the Social Cognitive Theory to try to explain how cognitive thought affects human behavior. The Social Cognitive Theory provides a framework for understanding, predicting and changing human behavior as an interaction between behavior, personal factors and environment (Bandura, 1986). Within this model of triadic reciprocity, all three entities operate as interacting determinants of each other (Figure 1). Bandura identified four components of human functioning that are key in the process of human adaptation and change: (a) cognitive, (b) vicarious, (c) self-regulatory and (d) self-reflective.

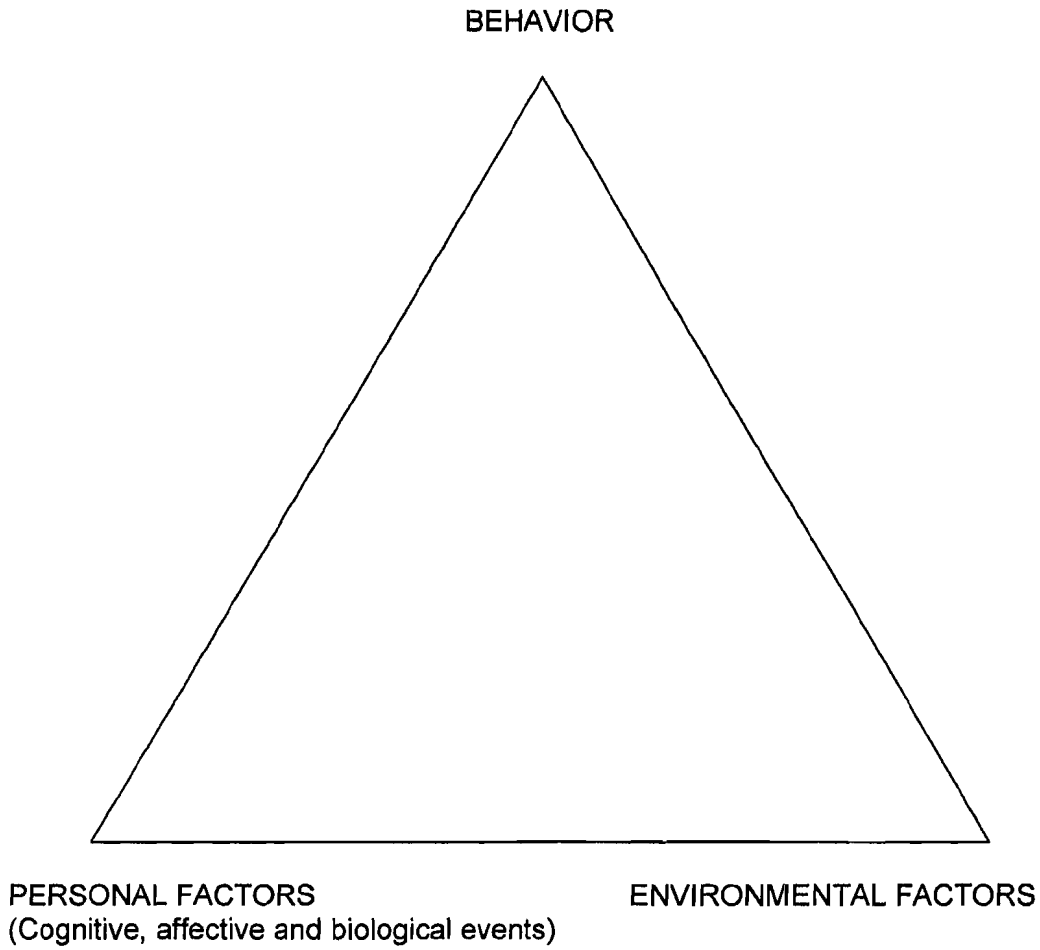

Figure 1. Social Cognitive Theory Conceptual Model (Bandura, 1986).

Behavioral self-efficacy can be influenced by performance accomplishments, vicarious experience or social modeling, persuasion and internal feedback from physiological state (Bandura, 1977). For the purpose of this study, measurement of perception of general health was used to represent internal feedback from physiological state.

Self-efficacy is an integral element of the Social Cognitive Theory. According to Bandura (1995), overwhelming evidence reveals that self-efficacy is closely related to behavioral intentions and behavioral change. The stronger one's self-efficacy beliefs are, the more motivated one is to perform a task (Bandura, 1986). When self-efficacy is added to another set of other predictors, self-efficacy often will be the most powerful single predictor of change (Bandura, 1995). Self-efficacy stands out as a major contributor that affects not only the decision-making process, but also the initiation and maintenance process (Bandura, 1995). Self-efficacy can be a key factor in successfully changing risk behaviors and adopting new health behaviors. The following is a case study application demonstrating Bandura's Social Cognitive Theory.

Case Study Application

Mr. William Halsey, a 69-year-old gentleman, was angry when he came in for his first day of cardiac rehabilitation following his CABG surgery. Prior to his surgery, he never had spent a day in the hospital and always had been very active. He had owned a local clothing business in town and had just retired 2 years prior. Very well known and respected in the community, Mr. Halsey discovered he had CHD when he came in 1 week before to the emergency room with what he thought was a bad case of heartburn. Shortly after arriving, he was on a helicopter flying miles away to have emergency CABG

surgery. The experience turned his world upside down. He was experiencing pain, dependency and fears he never had before. Added to that was a seemingly insurmountable list of new do's and don'ts for his life that he did not believe he could fulfill.

Mr. Halsey reluctantly began coming three times weekly for this cardiac rehabilitation where he exercised along side several other cardiac patients. Despite his initial misgivings about his capabilities, Mr. Halsey was encouraged to talk to other cardiac rehabilitation participants and they shared their stories equally back and forth (vicarious experience). They encouraged one another, too, as time went on (social modeling). The staff also encouraged Mr. Halsey by making sure he was personally updated weekly on his progress (persuasion). Before long, Mr. Halsey was exercising on every type of exercise equipment in the gym (personal accomplishment) and he was feeling much better physically (internal feedback from physiological state). In fact, he now was the one encouraging the new cardiac rehabilitation patients as they started in the program. Mr. Halsey finished his cardiac rehabilitation, felt confident that he could maintain the healthy behavior changes he had made, joined the independent fitness program at the hospital and returned to enjoying life.

This case study is an appropriate model for the current study because it demonstrates how Mr. Halsey was able to develop his behavioral self-efficacy using five sources of influence as outlined by Bandura's Social Cognitive Theory. As Mr. Halsey's self-efficacy beliefs developed, his ability to maintain healthy lifestyle behaviors was realized.

Literature Review

The literature review includes research on perception of general health and self-efficacy. The review also references research on CABG surgery.

Perception of General Health

Rumsfeld et al. (2001) studied changes in health-related quality of life following CABG surgery. The sample came from 3,076 elective CABG surgery patients who were hospitalized at 14 different Veterans Affairs medical centers. A sample of 1,744 was obtained. Participants completed the SF-36 at baseline before surgery and again at 6 months following surgery. The purpose of the study was to determine if improvement in HRQL (of which perception of general health is a variable) with CABG surgery is a function of baseline health status.

The study included a relatively high prevalence of noncardiac comorbidities such as diabetes and cerebral and peripheral vascular disease. Approximately 55% had left ventricular ejection fraction less than 0.55 and approximately 9% had prior heart surgery. Participants were divided into quartiles of baseline mental component summary (MCS) and physical component summary (PCS) scores. The mean MCS score of 46.1 represented a modest 4% improvement for the total study population. The mean PCS score of 38.2 represented a 16% impr5ovement. Multivariable linear regression models of change were developed to evaluate the association between pre and post scores. After dividing participants into quartiles of baseline, MCS and PCS scores, participants in the lowest ends of both MS and PCS scores experienced the greatest improvement. The study demonstrated the ability of CABG surgery to improve overall HRQL, including perception of general health, with the variable that most influenced both MCS and PCS

scores identified as preoperative self-reported health status. A study conducted by Welk, Stevens, Schults, Nelsen, Beggs and Nugent (2003) demonstrated similar results.

Gjeilo, Whaba, Klepstad, Lydersen and Stenseth (2005) did a comparison study of HRQL on a sample of 203 participants who were 3 years postoperative CABG surgery and the general Norwegian population. The sample came from 243 eligible participants who had CABG surgery at St. Olav's Hospital in Norway. Reference values for the Norwegian population were obtained from the standard Norwegian SF-36 version. Age and gender were adjusted to derive expected mean values and t-tests were used for statistical comparisons.

Health-related quality of life indicators reflected comparable results for the two populations studied. The mean for perception of general health was 65.2 for the CABG participants and 68.7 for the general Norwegian population with a p value of 0.04. In accordance with several other studies (Bute, Mathew, Blumenthal, Welsh-Bohmer, White, Mark, Landolfo & Newman 2003; Failde, Ramaos, Fernandez-Palacin & Gonzalez-Pinto, 2006; Vaccarino et al., 2003), women reported poorer perceptions of general health than did men. This study did not identify age as a factor whereas other studies did (Herlitz, Wiklund, Sjoland, Karlson, Karlsson, Haglid, Hartford & Caidahl, 2000; Welk et al., 2003). Other studies have shown that factors such as work status (Bradshaw, Jamrozik, Gilfillan & Thompson, 2005) and cardiac rehabilitation (Lindsay, Hanlon, Smith & Belcher, 2002) can have a positive effect on perception of general health. Todaro, Shen, Niaura, Tikemeier and Roberts (2004) reviewed 13 previous studies on the benefits of cardiac rehabilitation and found that in all of the studies, cardiac rehabilitation participants demonstrated greater improvement in quality of life than those receiving usual care.

Self-Efficacy

A study by Sullivan et al. (1998) examined self-efficacy and self-reported functional status in CHD. Out of 270 eligible participants, 194 were included in the sample. Baseline data and 6-month follow-up data were collected on demographics, physical functioning and role dysfunction. The Cardiac Self-Efficacy Questionnaire was used to rate confidence with knowing or acting on each of 16 different statements included in the survey.

The purpose of the study was to determine if self-efficacy would have an enduring effect over 6 months on physical, social and family function outcomes. Three multiple regression models were built to determine the role of self-efficacy in predicting physical functioning and role dysfunction. Self-efficacy was determined to significantly predict all three outcomes after controlling for anxiety and other significant correlates.

Of the four antecedents to self-efficacy, Bandura (1997) identified vicarious experience show up repeatedly in the literature as a means of increasing self-efficacy. A randomized, controlled trial was conducted by Parent and Fortin (2000) on 56 first-time male patients undergoing CABG. The results of the study demonstrated how vicarious experience provided to pre-CABG patients by former CABG patients resulted in a significant decrease in anxiety during hospitalization. A significant increase in self-efficacy expectation and self-reported activity such as walking and climbing stairs also was demonstrated for the experimental group when compared to the control group. The State-Trait Anxiety Inventory and Jenkins Self-Efficacy Scales were the tools used in this study.

A cross-sectional study by Senior, Marteau and Weinman (2005) examined perceived control over cholesterol for a sample of 340 people who were predisposed by

heredity to hyperlipidemia. The Revised Illness Perception Questionnaire, the Speilberger State Trait Anxiety Inventory and the Hospital Anxiety and Depression Scale were the instruments used in this study. Previous experience of heart disease, mastery over lipid levels, better mood and causal attributions demonstrated association with perceptions of control and self-efficacy. The need for further research to discover interventions that can increase perceptions of control and self-efficacy were stated.

Self-efficacy enhancement intervention studies appear more in the literature. Verbal encouragement and mastery were the efficacy enhancement used by a group of APNs to study 110 unpartnered cardiac elders (Hiltunen, Winder, Rait, Buselli, Carroll and Rankin, 2005). In this randomized clinical trial, telephone calls were made to participants at 2, 6 and 10 weeks and exercise promotion, energy management and active listening were the interventions. Participants who received the efficacy enhancement intervention showed significant improvement over those who had not received the intervention. Similarly, in a qualitative study by Rankin, Butzlaff, Carroll and Reedy (2005), 40 narrative accounts were examined using thematic analytic techniques. The results of this study showed that functional and emotional support provided to the unpartnered cardiac patient demonstrated potential for enhancement of self-efficacy for recovery from cardiac events for this population.

Coronary Artery Bypass Graft Surgery

Surgical revascularization for atherosclerotic heart disease is one of the true success stories in modern medicine. Since the beginning stages of development, relief from anginal symptoms, improvement in exercise tolerance and realization of survival benefit after revascularization have resulted from this surgical intervention. Three large, prospectively randomized, multicenter trials were conducted in the 1980s to define

subsets of populations likely to benefit from CABG surgery. They included the Coronary Artery Surgery Study (CASS), the Veteran's Administration Coronary Artery Bypass Trial and the European Coronary Artery Bypass Trial. These studies helped to identify patients likely to benefit in terms of prolongation of life and specifically addressed patients with more severe disease as those most appropriate to receive surgery for the survival benefit (Eagle, Guyton, Davidoff, Edwards, Ewy, Gardner, Hart, Herrmann, Hillis, Hutter, Lytle, Marlow, Nugent & Orszulak, 2004). As surgical techniques continue to improve, hope abounds that new surgical procedures can offer similar HRQL improvement with fewer setbacks for the CABG patient postoperatively.

A study by Al-Ruzzeh, Mazrani, Wray, Modine, Nakamura, George, Ilsley and Amrani (2004) examined the effects of minimally invasive direct coronary artery bypass (MIDCAB) surgery on HRQL compared to conventional midline sternotomy for a sample of 75 participants. Telephone interviews assessed HRQL at 11 weeks postoperative. The MIDCAB group demonstrated significant differences in perception of general health with a mean of 85.7 compared with the conventional group with a mean of 68.1. Another significant finding was the lower prevalence of anxiety and depression manifested by the MIDCAB group when compared to the conventional group. For all other measures of HRQL, the groups did not differ significantly.

Summary

The purpose of this study was to examine the relationship between perception of general health and self-efficacy in the CABG patient. Bandura's theoretical framework was used in this study. Perception of general health as on of the HRQL indicators was discussed. Research on self-efficacy and the role it plays in physical, social, and family

outcomes along with research on vicarious experience and efficacy enhancement interventions were presented. A brief review of the history of CABG was discussed concluding with research regarding HRQL for the MIDCAB.

CHAPTER III

METHODOLOGY

The purpose of this study was to examine the relationship between perception of general health and self-efficacy in the CABG patient. In this chapter, the design, population, sample, setting, data collection instruments, procedure for data collection and analysis are presented..

Study Design

The design for this study was a nonexperimental, ex post facto, correlational design. This design was chosen because variations in the independent variable—perception of general health—occur in the natural course of events and the data were collected after the fact. A correlational design was used to determine if a relationship exists between perception of general health and self-efficacy to determine if self-efficacy scores increase as perception of general health scores increase. The variables measured were perception of general health and self-efficacy. Extraneous variables were controlled with specified inclusion criteria and a large sample size. Due to the use of convenience sampling, some extraneous variables could not be controlled.

Population, Sample and Setting

The target population for this study was adults in the Midwest who had undergone CABG surgery and participated in an outpatient cardiac rehabilitation program. The accessible population included approximately 1,500 adults who live in Wisconsin, have undergone CABG surgery and participated in an outpatient cardiac

rehabilitation program at one of seven different hospitals in Wisconsin. The setting for this study was cardiac rehabilitation programs that have been involved in collecting data for the Wisconsin Society of Cardiovascular and Pulmonary Health and Rehabilitation (WISCPHR) W2eBOP. The sample for this study was a nonprobability convenience sample that included both male and female adults of varying ages. Inclusion criteria were: (a) CABG patients participating in an outpatient cardiac rehabilitation program in Wisconsin, (b) willingness to participate in the surveys, (c) ability to read and answer survey questions and (d) ability to speak English. Exclusion criteria were: (a) CABG patients who did not complete both pre and post surveys and (b) CABG patients who did not complete 8 to 12 weeks of outpatient cardiac rehabilitation.

Data Collection Instruments

Three instruments were used in this study: (a) The W2eBOP Individual Patient Outcomes-Phase II measured demography (Appendix A); (b) the Medical Outcomes Short Form 36-Item Health Survey (SF-36) measured perceptions of general health (Appendix B); and (c) the Modified Cardiac Self-Efficacy Tool (MCSET) measured self-efficacy (Appendix C). The instruments were selected because of their inclusion in W2eBOP and because of their appropriateness to measure outcomes in the cardiac patient after reviewing the literature.

Use of the SF-36 was approved through dues paid to WISCPHR as a part of the data collection for the W2eBOP data collection. Use of the MCSET was also approved with participation in the W2eBOP program. Written verification of approval and permission to use these instruments was obtained from WISCPHR prior to data collection (Appendix D).

W2eBOP Individual Patient Outcomes-Phase II

The demographic data collection instrument used was developed for use with the W2eBOP data collection project. Demographics included were age, gender, ethnicity and diagnosis.

Short-Form 36-Item Health Survey

Perception of general health was measured by the SF-36 health attributes for general health perception. This is a self-report questionnaire that measures health-related quality of life.

The SF-36 was constructed to measure eight health concepts. It is a 36-item questionnaire that includes one multi-item scale that measures physical, social and role functioning; mental health; bodily pain; vitality; and general health perception (Ware & Sherbourne, 1992). General health perception is defined as a personal evaluation of health, including current health, health outlook and resistance to illness (McHorney et al, 1992).

General health perception is measured using five self-report survey items with a 5-point Likert scale. Meaning for the low end of the Likert score is "believes personal health is poor and likely to get worse." Meaning for high-end Likert scale is "believes personal health is excellent" (Ware & Sherbourne, 1992). Participants are asked to respond to the questionnaire according to how they feel at the time they are completing the self-report.

Reliability and Validity

The original version of the SF-36 has undergone many revisions to improve the precision of the short form scales used to measure the health concepts. The version used for this study was SF-36v2.

The SF-36 was compared to the Nottingham Health profile in 1992 (Brazier, Harper, Jones, O'Cathain, Usherwodd & Westlake, 1992). Acceptability, reliability and validity were tested. Cronbach's alpha was considerably high at greater than 0.85 with a reliability coefficient greater than 0.75 for all dimensions except social functioning. The reliability of the SF-36v2 to measure general health perception was 0.78 (r = 0.96) when compared to the 22-item general health rating index (McHorney et al., 1992).

Modified Cardiac Self-Efficacy Tool

The MCSET is a modified version of the Cardiac Self-Efficacy Questionnaire developed by Dr. Mark Sullivan. The questionnaire has two factors: control symptoms and maintain function. Self-efficacy to control symptoms is measured using 11 self-report survey items with a 5-point Likert scale. The low end of the scale is reported as "not at all confident" and the high end of the scale is reported as "completely confident" with an alternative "does not apply to me" response offered. Participants are asked to respond to the questionnaire according to how they feel at the time they are completing the self-report.

Reliability and Validity

Sullivan et al. (1998) reported that the Cardiac Self-Efficacy questionnaire demonstrated high internal consistency with a Cronbach's alpha of .90 for control symptoms and good convergent and discriminant validity. A pilot study completed by the W2eBOP committee on the MCSET demonstrated a highly reliable Cronbach's coefficient alpha of .88.

Data Collection Procedures

The researcher obtained approval from the University of Wisconsin Oshkosh Institutional Review Board (IRB) prior to beginning the data collection (Appendix E). The researcher also obtained IRB approval from nine different hospitals where the CABG patients had participated in cardiac rehabilitation therapy. Informed consent was already obtained as a part of the admission process at all hospitals that are included in this study.

Since this was an ex post factor correlational study, the questionnaires were distributed upon entry into the cardiac rehabilitation program and again at discharge by the cardiac rehabilitation staff as a part of the W2eBOP data collection project. Demographic information was completed by the cardiac rehabilitation staff. For this study, the researcher obtained a convenience sample from seven cardiac rehabilitation programs in Wisconsin that were involved in the larger project. Data were collected from 3 years of individual program records. Copies of individual patient outcome forms or spreadsheets that were completed between July 1, 2004 and June 30, 2007 were obtained for this study. All personal identifiers were removed prior to obtaining these records in accordance with HIPPA regulations. Records were sent to the researcher in a stamped, self-addressed envelope provided by the researcher.

The questionnaires sere anonymous and participants had the right to self-determination, full disclosure, fair treatment and privacy. Potential benefits for the participants include increased knowledge of their health and provision of a more complete medical profile for their primary care provider. Potential risks for inclusion may be psychological or emotional distress resulting from self-disclosure, discomfort, frustration or anger at the type of questions.

Data Analysis

For this quantitative study, data were entered into the Statistical Package for the Social Sciences-PC (SPSS-PC). Data were analyzed using descriptive statistics and Pearson's r to examine the relationship between the variables. The significance level was set at alpha = .05. Nominal measurement was used to analyze the demographic data.

Limitations

1. Use of nonprobability convenience sample limits the Generalizability of the findings.
2. Self-selection may bias the results.

Summary

In this chapter, the methodology that was used to examine the relationship between perception of general health and self-efficacy for the CABG patient was presented. A nonexperimental, ex post factor, correlational design was used to study this research question.

CHAPTER IV

FINDINGS AND DISCUSSION

The purpose of this study was to examine the relationship between perception of general health and self-efficacy in the CABG patient. This chapter examines this relationship and provides an analysis of the research findings. A descriptive profile of the demographic data, descriptive statistics and the relationships between variables are presented. The research question is addressed through descriptive statistics of the sample, correlations of the independent and dependent variables and partial correlations of the variables.

Of the 784 surveys that were returned from participating hospitals, 776 (98%) were usable. The reason for exclusion of the eight additional surveys was due to incomplete data reported on those surveys. Data were collected at seven cardiac rehabilitation programs from the nine that were originally pursued. Exclusion of the other two programs was due to insufficient data at one of the programs and lack of time to complete the data retrieval at the other. The seven cardiac rehabilitation programs included were from seven different counties across the state of Wisconsin. A sample size of 785 allowed detection of a correlation of .10 at $p < .05$ with a confidence of 80% (Polit & Hungler, 1999, p. 495).

Demographic Description

The majority of the participants in this study were White (97.8%) with an age range of 35 to 89 years ($M = 66.44$, $SD = 10.15$). Adults under age 50 comprised 5.4%

of the sample and adults over age 80 comprised 7.3%. The largest percentage was in the 60-to-79 age group that comprised 65% of the sample (Table 1).

Table 1

Age Distribution and Frequencies

Age Ranges	Frequency	Percentage
35-49	42	5.4%
50-59	161	20.9%
60-69	254	32.8%
70-79	251	32.2%
80-89	68	8.7%
Total	776	100.0%

N = 776
Mean = 66.44
Median = 67.00
Standard Deviation = 10.15

The sample included 564 males (72.7% and 212 females %27.3%) for a total of 776 participants. All participants had undergone CABG surgery and had completed a minimum of 8 to 12 weeks of cardiac rehabilitation.

Descriptive Statistics for Instruments

The instruments used in this study were the Medical Outcomes Short Form 36-Item Health Survey (SF-36) (Ware & Sherbourne, 1992) and the Modified Cardiac Self-Efficacy Tool (MCSET) (Sullivan et al., 1998). The health attribute scale of perception of general health (GH) obtained from the SF-36 was examined along with the self-

confidence to control symptoms (SE-CS) obtained form the MCSET. Scores for both attributes were obtained pre and post cardiac rehabilitation.

Medical Outcomes Short Form 36-Item Health Survey

Perception of Health

Participants were asked to complete the survey questions on the SF-36 by assessing their own health. The attribute of GH was scored using summated ratings. The raw scores were coded, recalibrated, summated and transformed into a scale ranging from 1 to 100. Lower scores represented an evaluation of personal health as poor and believing it would get rose. Higher scores represented evaluation of personal health as excellent (Ware et al., 1993).

Pre and post scores for all participants were analyzed. Pre GH scores ranged from 7.0 to 100.0 (M = 66.18, SD = 18.34) and post GH scores ranged from 15.0 to 100.0 (M = 72.31, SD = 17.31). Refer to Table 2 for frequencies of these attributes.

Table 2

Pretest and Posttest SF-36 GH/SE-CS

	Mean	SD
Pre GH	66.18	18.34
Post GH	72.31	17.31
Pre SE-CS	2.72	.75
Post SE-CS	3.22	.60

Using a paired t-test, the participants' perceptions of GH scores were compared and a highly statistically significant difference was noted between pre and post scores for GH 9 p = .000) showing a significance increase in perception of GH in the post survey.

Modified Cardiac Self-Efficacy Tool

Self-Confidence to Control Symptoms

Participants were asked to complete the survey questions by rating their confidence with knowing or acting on each of the seven statements. Scores ranged from 0 being not at all confident to 4 bind completely confident (Sullivan et al., 1998). A composite score was calculated for this variable by adding all responses and dividing by the number of items answered on the survey. Scores ranged from 0.0 to 4.0.

The participants' pre and post scores were analyzed. The scores for pre SE-CS ranged from 0.5 to 4.0 (M = 2.72, SD = 0.75). Post scores ranged from 0.9 to 4.0 (M = 3.2, SD = 0.60). T-tests were used for statistical comparisons of pre and post scores and a highly statistically significant difference (p = .000) was noted between these scores showing a significant increase in SE-CS on the post survey. .

Research Question

What is the relationship between perception of general health and self-efficacy in the CABG patient?

This research question examines the relationship among demographic variables and GH as they relate to SE-CS for a participant who has undergone CABG surgery. Correlations and partial correlations of the demographics are examined.

The 2-tailed correlations between GH and SE-CS were computed. Scores for pre GH and pre SE-CS were compared with scores for post GH and post SE-CS. There were statistically significant correlations noted among these variables. Pretest-posttest scores for GH and for SE-CS were strongly correlated (.647 [$p < .001$] for GH; .507 [$p < .001$] for SE-CS). Pre scores for GH and for SE-CS ere significantly correlated ($r = .340$ [$p < .001$]), as were post scores for GH and for SE-CS ($r = .411$ [$p < .001$]). AS predicted, pretest GH was significantly correlated with posttest SE-CS (.289 [$p < .001$]). When pre SE-CS was controlled for using a partial correlation coefficient, the pre GH and post SE-CS correlations remained statistically significant with $r = .1143$ ($p < .001$). Furthermore, when age was controlled for along with pre SE-CS, the partial correlation remained statistically significant with $r = .1289$. When controlling for a third variable—gender, along with pre SE-CS and age, the results continued to be statistically significant with $r = .1283$ (Table 3).

Table 3

Correlation Coefficients of Pre GH and Post SE-CS

		r	df	p
Pearson Correlation	Pre GH and Post SE-CS	.289	774	.000
Partials adjusted for variable sets	Pre SE-CS	.1143	773	001
	Pre SE-CS + age	.1289	772	.000
	Pre SE-CS + age + gender	.1283	771	.000

Discussion of Results

This study revealed that there is a relationship between perception of general health and self-efficacy for the CABG patient. Even when the variables of age, pre SE-

CS and gender are controlled for, the relationship between pretest GH and posttest SE-CS remains strong.

As this study and multiple previous studies have shown, GH improves after CABG surgery (Rumsfeld et al., 2001; Todaro et al., 2004). The pre GH score of 66.18 for these participants was below the national average for GH set at 71.95 (Ware et al., 1993), but rose significantly to 72.31 on the post GH making it slightly higher than the overall national average. For the participant, higher scores for GH signified a higher evaluation of their health as excellent versus lower scores signifying that they evaluated their health as poor and believed it would get worse.

Of specific interest in this study is the relationship between general health at the beginning of cardiac rehabilitation (pretest GH) and the control of symptoms at the completion of cardiac rehabilitation (posttest SE-CS). That relationship was statistically significant. However, even the stronger correlation of pretest and posttest symptoms control suggested the need to control for pretest SE-CS scores as well as other variables potentially predictive of changes in symptom control. Therefore, the pretest GH and posttest SE-CS correlation was adjusted for relevant sets of variables via partial correlation coefficients.

Since prior studies have demonstrated that self-efficacy may influence outcomes Barnason et al., 2002; Warren, Stein & Grella, 2007), pre SE-CS was controlled for. With this variable removed, the relationship between pretest GH and posttest SE-CS remained statistically significant. Age has also been shown to be a factor that may influence results (Herlitz et al., 2000; Welk et al., 2003), so this variable was controlled for in addition to pre SE-CS. The relationship remained statistically significant. Lastly, because gender has also been identified as a variable that may influence outcomes

(Bute et al., 2003; Failde et al., 2006; Vaccarino et al., 2003), gender was controlled for along with age and pre SE-CS. Even after all three variables were controlled for, the relationship between pretest GH and posttest SE-CS remained highly statistically significant, demonstrating a strong relationship between GH and SE-CS for the CABG patient.

Summary of Results

This study was comprised of 766 mostly White men and women who had undergone CABG surgery. All of the participants had participated in an outpatient cardiac rehabilitation program for a minimum of 8 to 12 weeks. Descriptive statistics, t-tests, correlations and partial correlations were used to answer this research question.

The results of this study demonstrated a highly statistically significant relationship between GH at the beginning of cardiac rehabilitation and SE-CS at the completion of cardiac rehabilitation for this population. Even after the variables pre SE-CS, age and gender were controlled for, the relationship between GH and SE-CS remained statistically significant.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

In this chapter the study is summarized and the findings are reviewed in relation to the research question and the literature review. Conclusions, implications for nursing and recommendations for further research are discussed.

Coronary heart disease is the single leading killer of men and women in the U.S. today. Revascularization of occluded coronary arteries through CABG surgery has become increasingly more popular over the years with an estimated 427,000 CABG surgeries being performed in 2004 (American Heart Association, 2004). Recovery following CABG surgery can be difficult and involve the need for several lifestyle changes or modifications. Since self-efficacy has been shown over and over in the research to be a strong factor in relation to change, APNs need to have an understanding of the best ways to influence and built self-efficacy for this population.

The purpose of this study was to examine the relationship between perception of general health and self-efficacy to control symptoms for the CABG patient. An ex post factor, correlational, quantitative design was utilized. Three instruments were used: (a) the W2eBOP Individual Patient Outcomes-Phase II demographic form, (b) the SF-36v2 Health Survey and (c) the MCSET. Descriptive statistics, correlations and partial correlations were used to answer the research question.

Bandura's (1995) Social Cognitive Theory was utilized in this study. Bandura theorized that self-efficacy can affect how people think, feel, motivate themselves and

act in relation to a given situation and many studies have shown that self-efficacy can play a significant role in the ability to change and adopt a valued health behavior.

Review of Findings

This study adds to the knowledge base of caring for the past CABG patient. By having a better understanding of the relationship between GH and SE-CS, one is better able to assist the CABG patient on the road to recovery. Due to the often ominous need for multiple lifestyle changes and/or modifications following CABG surgery, understanding how GH can affect SE-CS is an important key in helping the CABG patient achieve optimal heart health.

In this study, 766 participants were included who had undergone CABG surgery and had completed a minimum of 8 to 12 weeks of cardiac rehabilitation. Surveys to assess GH and SE-CS were given prior to starting cardiac rehabilitation and again at the end of their rehab. The results demonstrated highly statistically significant relationships between GH and SE-CS. These results were similar to a study done by Gardner et al. (2003) that measured quality of life and self-efficacy for cardiac rehabilitation participants and multiple studies that showed cardiac rehabilitation as having a positive effect on quality of life measures such as GH (Gulanick, Gavic, Kramer & Ray, 2002; Hamm et al., 2004; Sledge, Ragsdale, Tabb & Jarmukli, 2000; Verrill, Barton, Beasley, Brennan, Lippard & King ., 2001). Unlike previous studies that showed decreased self-efficacy, age and gender as limiting factors, when these variables were adjusted for in this study, the relationship between pretest GH and posttest SE-CS remained significant.

Conclusions

1. Pretest GH predicts posttest SE-CS.
2. When adjusted for pretest SE-CS, age and gender, the overall relationship between pre GH and post SE-CS remains significant, though attenuated.
3. Participation in cardiac rehabilitation has a positive effect on GH and SE-CS for the CABG patient.

Adopting health-promoting behaviors and refraining from health-impairing behaviors can be difficult for the CABG patient. The challenge is to find ways to assist the CABG patient in making the necessary changes required to maintain good health. Bandura (1995) theorized that self-efficacy can be the single most powerful predictor of change and it can help influence and motivate behaviors toward healthy change. Since the results of this study demonstrated that there is a statistically significant ($p = .000$) positive relationship between pretest GH and posttest SE-CS, finding ways to increase GH and support high levels of GH should be pursued.

Implications for Nursing

The APN is in a key position to positively influence a patient's GH. Through expert medical care, individualized health education and positive feedback, GH improves for the majority of people. Providing expert medical care and health education is an expectation of every APN. Since a patients' perceptions of their health can be strongly influenced by what their primary care provider tells them, providing clear affirming messages regarding the positive aspects of a patient's health status should also be included in patient care whenever possible.

Nurses should be educated on the importance of GH and how it relates to SE-CS for the CABG patient. New interventions that could enhance GH for this population should be pursued, researched and ultimately put into practice in order that the CABG patient is provided with the best possible care in his/her recovery.

All CABG patients should be referred for cardiac rehabilitation. With the vast body of research demonstrating greater improvement in quality of life for those who receive cardiac rehabilitation versus those who do not (Todaro et al., 2004), cardiac rehabilitation should be included in the plan of care for the CABG patient.

Recommendations

The following recommendations for further research are warranted, based on the findings of this study:

1. Replication of this study using a control group.
2. Examination of additional ways to improve GH.
3. Replication of this study using a more ethnically diverse population.
4. A qualitative study to gather data about what a CABG patient would see as positive reinforcement for GH.

Summary

The recovery process following CABG surgery can be difficult. There can be multiple behavior changes and lifestyle modifications required that oftentimes make the CABG patient feel overwhelmed and unable to comply. Health care providers must work closely with the CABG patient and provide excellent care, education and encouragement

in order to improve GH. As GH improves, SE-CS will also improve and CABG patients will be better equipped to manage their risk factors for better overall heart health.

APPENDIX A

W2eBOP Individual Patient Outcomes-Phase II

W2eBOP Individual Patient Outcomes—Phase 2

Age: _____ **MR#:** _____

Gender: M F

Ethnic Category: Cauc African-Am Asian-Am Hispanic-Am Native Am Other

Diagnosis: MI CAB MI/CAB MI/PTCI PTCI Angina Other

Entry date: _____

Working before CR?: Y N

	Pre	Post	Outcome		
SF36 scores:					
PF	_____	_____			
RP	_____	_____			
BP	_____	_____			
GH	_____	_____			
VT	_____	_____			
SF	_____	_____			
RE	_____	_____			
MH	_____	_____			
HT	_____	_____			
METs	_____	_____	**At 5+ METs?**	Y	N
Exercise Habits			**Independ. exercise?**	Y	N
Rest BP	_____	_____	**At BP goals?**	Y	N
Smoking?	Y N	Y N	**If Pre=Y, Post=N?**	Y	N
Lipids:					
Last panel date:	_____	_____	**W/in past 6 mos?**	Y	N
TC	_____	_____			
TG	_____	_____			
HDL	_____	_____			
LDL	_____	_____	**LDL<100mg/dl?**	Y	N
On lipid meds?	Y N	Y N			
BMI	_____	_____	**Change in BMI:**	_____	
MCSET scores					
SE-CS score:	_____	_____			
SE-MB score:	_____	_____			
Med-C score:	_____	_____	**80+% at d/c?**	Y	N
			Readmitted?	Y	N
Other			**ER visits?**	Y	N
			Referred to MD?	Y	N
			Return to work?	Y	N
			1:1 diet consult?	Y	N
			1:1 psych consult?	Y	N
	DC date:	_____	**Number of sessions:**	_____	
			Program time (wks):	_____	

APPENDIX B

Medical Outcomes Short Form 36-Item Health Survey

Your Health in General

Please answer every question. Some questions may look like others, but each one is different. Please take the time to read and answer each question carefully, and mark an ☒ in the one box that best describes your answer. ***Thank you for completing this survey!***

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

Excellent	Very good	Good	Fair	Poor
☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

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

Much better now than one year ago	Somewhat better now than one year ago	About the same as one year ago	Somewhat worse now than one year ago	Much worse now than one year ago
☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

3. **The following questions are about activities you might do during a typical day. Does <u>your health now limit you</u> in these activities? If so, how much?**

	Yes, limited a lot	Yes, limited a little	No, not limited at all
a. <u>Vigorous activities</u>, such as running, lifting heavy objects, participating in strenuous sports	☐	☐	☐
b. <u>Moderate activities</u>, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	☐	☐	☐
c. Lifting or carrying groceries	☐	☐	☐
d. Climbing <u>several</u> flights of stairs	☐	☐	☐
e. Climbing <u>one</u> flight of stairs	☐	☐	☐
f. Bending, kneeling, or stooping	☐	☐	☐
g. Walking <u>more than a mile</u>	☐	☐	☐
h. Walking <u>several hundred yards</u>	☐	☐	☐
i. Walking <u>one hundred yards</u>	☐	☐	☐
j. Bathing or dressing yourself	☐	☐	☐

4. **During the <u>past 4 weeks</u>, how much of the time have you had any of the following problems with your work or other regular daily activities <u>as a result of your physical health</u>?**

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
a. Cut down on the <u>amount of time</u> you spent on work or other activities	☐	☐	☐	☐	☐
b. <u>Accomplished less</u> than you would like	☐	☐	☐	☐	☐
c. Were limited in the <u>kind</u> of work or other activities	☐	☐	☐	☐	☐
d. Had <u>difficulty</u> performing the work or other activities (for example, it took extra effort)	☐	☐	☐	☐	☐

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

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
a. Cut down on the <u>amount of time</u> you spent on work or other activities	☐	☐	☐	☐	☐
b. <u>Accomplished less</u> than you would like	☐	☐	☐	☐	☐
c. Did work or other activities <u>less carefully</u> than <u>usual</u>	☐	☐	☐	☐	☐

6. **During the <u>past 4 weeks</u>, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?**

Not at all	Slightly	Moderately	Quite a bit	Extremely
☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

7. **How much <u>bodily</u> pain have you had during the <u>past 4 weeks</u>?**

None	Very mild	Mild	Moderate	Severe	Very Severe
☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6

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

Not at all	A little bit	Moderately	Quite a bit	Extremely
☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

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...**

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
Did you feel full of life?	☐1	☐2	☐3	☐4	☐5
Have you been very nervous?	☐1	☐2	☐3	☐4	☐5
Have you felt so down in the dumps that nothing could cheer you up?	☐1	☐2	☐3	☐4	☐5
Have you felt calm and peaceful?	☐1	☐2	☐3	☐4	☐5
Did you have a lot of energy?	☐1	☐2	☐3	☐4	☐5
Have you felt downhearted and depressed?	☐1	☐2	☐3	☐4	☐5
Did you feel worn out?	☐1	☐2	☐3	☐4	☐5
Have you been happy?	☐1	☐2	☐3	☐4	☐5
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.)?**

All of the time	Most of the time	Some of the time	A little of the time	None of the time
☐1	☐2	☐3	☐4	☐5

11. How TRUE or FALSE is each of the following statements for you?

	Definitely true	Mostly true	Don't know	Mostly false	Definitely false
a. I seem to get sick a little easier than other people	☐	☐	☐	☐	☐
b. I am as healthy as anybody I know	☐	☐	☐	☐	☐
c. I expect my health to get worse	☐	☐	☐	☐	☐
d. My health is excellent	☐	☐	☐	☐	☐

THANK YOU FOR COMPLETING THESE QUESTIONS!

For office use only:

☐ Entry ☐ DC ☐ FU ____ ____

Age ____ M F Diag Cat: ____ ____ ____ ____

Scores:

PF ____ RP ____ BP ____ GH ____ HT ____

VT ____ SF ____ RE ____ MH ____ ____

PH ____ MH ____

APPENDIX C

Modified Cardiac Self-Efficacy Tool

Name_____ MR#_____ Date_____ Age_____

Cardiac Self-Confidence Questionnaire

This questionnaire asks you to rate how confident you are today you can take care of your heart health. Answer each question using the following scale:

0 Not at all confident	1 Somewhat confident	2 Moderately confident	3 Very confident	4 Completely confident	X Does not apply to me

1. How confident are you that you can control heart pain (if it were to occur) by changing your activity levels? ☐
2. How confident are you that you can control breathlessness by changing your activity levels? ☐
3. How confident are you that you can control heart pain (if it were to occur) by taking your medications? ☐
4. How confident are you that you can control breathlessness by taking your medications? ☐
5. How confident are you that you know when you should call or visit your doctor about your heart disease? ☐
6. How confident are you that you know how to make your doctor understand your concerns about your heart? ☐
7. How confident are you that you know how to take your cardiac medications as prescribed by your doctor? ☐
8. How confident are you that you know how much physical activity is good for you? ☐
9. How confident are you that you can lose weight (if you are overweight)? ☐
10. How confident are you that you can stop smoking (if you do smoke now)? ☐
11. How confident are you that you can change your diet (if it is recommended by the dietician or your physician)? ☐

SE-CS

(Please turn to next page)

Score: ☐

Name_____ MR#_____ Date_____ Age_____

0 Not at all confident	1 Somewhat confident	2 Moderately confident	3 Very confident	4 Completely confident	X Does not apply to me

12. How confident are you that you can maintain your usual social activities? ☐

13. How confident are you that you can maintain your usual daily or recreational activities? ☐

14. How confident are you that you can maintain your usual activities at work? ☐

15. How confident are you that you can maintain your sexual relationship with your partner? ☐

16. How confident are you that you can exercise at least five (5) days per week for at least thirty (30) minutes (enough to make you breathe harder and raise your pulse rate)? ☐

17. How confident are you that you can maintain the diet that has been recommended to you by the dietician or your physician? ☐

18. How confident are you that you can stay smoke-free (if you have quit smoking recently)? ☐

SE-MB

Score: ☐

19. Answer the following question by circling the number:
How many pills have you missed in the past week?

None	1-2	3-4	5-6	More than 6

For office use only: ☐ Phase 2-entry ☐ Phase 2-d/c ☐ 3 mo FU ☐ 6 mo FU ☐ 1 yr FU

Subscale score (to nearest tenth) = Sum of questions answered / # of questions answered

SE-CS score = ____

SE-MB score = ____

MED-C score = ____

APPENDIX D

WISCPHR Permission to Use WeBOP

WISCPHR
wisophr.wind.edu

November 16, 2007

Sandy Schaffer
Ripon Medical Center
933 Newbury Street
Ripon, WI 54971

Dear Sandy:

The Wisconsin Society for Cardiovascular and Pulmonary Health & Rehabilitation grants your request to use defined data from the Wisconsin Web-Based Outcomes Project (WeBOP) for your study on quality of life outcomes in Wisconsin patients with coronary artery disease. You must comply with all agreements to maintain data confidentiality and prevent the disclosure of information pertaining to individual hospitals and patients per HIPAA requirements and your institution's Institutional Review Board policies.

Please forward an abstract with the results of your study to Mark Vitcenda, MS, Project Manager, at your earliest convenience.

Thank you for your interest in our project.

Regards,

Mark Vitcenda

Mark Vitcenda, MS, FAACVPR
WeBOP Project Manager

APPENDIX E

UW Oshkosh IRB Approval Letter

THE UNIVERSITY OF WISCONSIN
OSHKOSH

November 8, 2007

Ms. Sandra Schaffer
524 Woodside Ave.
Ripon, WI 54971

Dear Ms. Schaffer:

On behalf of the UW Oshkosh Institutional Review Board for Protection of Human Participants (IRB), I am pleased to inform you that your application has been approved for the following research: Knowledge of Coronary Heart Disease Risk Factors in Women With Diabetes.

Your research has been categorized as EXEMPT. This means you will not be required to obtain signed consent. However, unless your research involves **only** the collection or study of existing data, documents, or records, you must provide each participant with a summary of your research that contains all of the elements of an Informed Consent document, as described in the IRB application material. Permitting the participant, or parent/legal representative, to make a fully informed decision to participate in a research activity avoids potentially inequitable or coercive conditions of human participation and assures the voluntary nature of participant involvement.

Please note that it is the principal investigator's responsibility to promptly report to the IRB Committee any changes in the research project, whether these changes occur prior to undertaking, or during the research. In addition, if harm or discomfort to anyone becomes apparent during the research, the principal investigator must contact the IRB Committee Chairperson. Harm or discomfort includes, but is not limited to, adverse reactions to psychology experiments, biologics, radioisotopes, labeled drugs, or to medical or other devices used. Please contact me if you have any questions (PH# 920/424-7172 or e-mail:rauscher@uwosh.edu).

Sincerely,

Dr. Frances Rauscher
IRB Chair

cc: Suzanne Marnocha
1258

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