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We hereby approve the research project/thesis

IMPACT OF A 12-WEEK CARDIAC REHABILITION PROGRAM

ON HEALTH PROMOTION

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IMPACT OF A 12-WEEK CARDIAC REHABILITION PROGRAM ON HEALTH PROMOTION

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Abstract

The purpose of this descriptive research was to examine the impact of this 12-week cardiac rehabilitation program on health promotion activities of subjects who have completed the 12-week cardiac rehab program at Grove City Medical Center, between the dates of January 1 2010 and December 31 2012. The patients participating in this study completed the demographic and health promoting lifestyle II survey, a 52 item questionnaire; rating themselves of health promotion activities and risk factor modifications since their completion of the 12-week cardiac rehab program. Nola Pender's Health Promotion Model was used for this study. Pender's model assesses three areas; (1) individual characteristics and experiences, (2) behavior specific cognitions and affect, and (3) behavioral outcomes (Pender, 2011). There is a collaborative effort from both the nurse and patient in which the nurse can assist the patient in changing behaviors to allow for a healthier lifestyle. The purpose of health promotion is to empower people to have more control of their disease and their lives (Ewles and, Simett, 2003; Stead, C.E., 2009. p. 598).

Life style II survey and the demographic survey were completed by twenty two participants. Of those twenty two participants, 9.09% had a recurrent event, while 90.9% did not have a recurrent event. Although the conclusion cannot be made that all

adherence to healthy lifestyle changes was a result of completion of the Grove City Medical Center's cardiac rehab program, there is clear evidence that participants that completed the Grove City Medical Center's cardiac rehab program are adhering to healthy lifestyle tendencies, there for the research supports $H_{A:}$ There is significant relationship between patients who have completed the Grove City Medical Centers cardiac rehab program and the adherence to healthy lifestyle changes after two years.

These results not only proves that Grove City Medical Center's cardiac rehab program is providing exceptional service to their participants, but it encourages providers including nurse practitioners to send their patients to this or other similar cardiac rehab programs. If an increase to adherence in health promotion activities and cardiac event risk factors and reoccurrences can be lowered, health care cost could be decreased, detrimental cardiac events could be avoided and most importantly lives could be saved.

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Chapter 1

Introduction

Heart disease and cardiac events are very prevalent problems in current health care. Cardiac rehabilitation programs, such as the Grove City Medical Center's program, have been created to positively influence health promotion activities and decrease recurrent cardiac events. The direct correlation between these outcomes and completion of the 12-week program required more research.

Background of Problem

Heart disease is not only a significant problem across the United States but very prevalent issue locally as well. According to Pennsylvania Department of Health (2011), heart disease is ranked as the leading cause of death in both Mercer and Butler counties equally in men and women of all races and ethnicities in 2011. In Venango County, heart disease was the second leading cause of death (Pennsylvania Department of Health, 2011). A statistical report by Murphy, Xu, and Kochanek (2013), the number one cause of death in the United States in 2010 was heart disease. Center for Disease Control confirms this statistical report by Murphy, Xu and Kochanek with the leading cause of death in America in 2010 was heart disease accounting for 596,577 deaths (CDC, 2014). Balady et al. (2011) explains, "There are an estimated 785,000 Americans who will suffer a new myocardial infarction and, nearly 470,000 will have a recurrent attack. Within five years of an initial MI, 15% of men and 22% of women ages 45-64 years of age and 22% of men and women greater than 65 years of age will have a recurrent MI or, a fatal coronary heart disease (CHD)" (p. 2951). This indicates that after one cardiac event there is an increased risk of having another.

Cardiac Rehabilitation (Cardiac Rehab) has been established for patients who have experienced a cardiac event such as an MI, CABG, and PTCA without a stent in order to reestablish a healthy active lifestyle. "Cardiac rehab programs offer cardiovascular risk factor reduction, encourage healthy behaviors and encourage active lifestyle by encouraging physical, mental and social functioning of the cardiac patient with cardiovascular disease," (Balady et al. 2011, p. 2951). Arena et al. (2012) argue, "Despite the clear benefits of formal, supervised outpatient CR [Cardiac Rehabilitation] and exercise training programs as well as strides in automatic referrals, current statistics continue to demonstrate that referral and participation rates of eligible patients remain alarmingly low" (p. 1321). Although there are studies that have shown some clear benefits of cardiac rehab, there were still gaps in the current research.

Nola Pender's Health Promotion Model (HPM) was utilized for this study. Pender's model explained that each patient, through life's experiences, has unique characteristics that they possess and that the nurse can assess eight beliefs for the focus of the model. With a collaborative effort from both the nurse and patient, the nurse can assist the patient in changing behaviors allowing for a healthier lifestyle. This was applied directly to the study of adherence to health promotion activities following completion of the Grove City Medical Center's cardiac rehab program.

Statement of Problem

Descriptive research was needed to examine the impact of the Grove City Medical Center's 12-week cardiac rehab program on adherence to health promotion activities of subjects after two years of completion for patients in western Pennsylvania. Research was also needed to determine percentage of participants that experienced a recurrent cardiac

event after two years of completion of Grove City Medical Center's cardiac rehab program.

Research Question(s)

(1) What impact does completion of the Grove City Medical Center's 12-week cardiac rehab program have on adherence to healthy lifestyle changes of participants in the program after two years, between January 1 2010 and December 31 2012?

(2) After completion of the Grove City Medical Center's cardiac rehab program, what percentage of participants experienced a recurrent cardiac event between January 1 2010 and December 31 2012?

Hypotheses

When explored, the relationship between completion of the Grove City Medical cardiac rehab program and the adherence to healthy lifestyle changes of participants in the program after two years, the hypothesis were as follows: H_A -There was a significant relationship between patients who have completed the Grove City Medical Center's cardiac rehab program and the adherence to healthy lifestyle changes after two years. H_0- There is no significant relationship between patients who have completed the Grove City Medical Center's cardiac rehab program and the adherence to healthy lifestyle changes after two years. When explored, the relationship between completion of the Grove City Medical Center's cardiac rehab program and whether or not the patient experienced a recurrent cardiac event between two and five years post completion of the program, the hypotheses are as follows: H_A –There was a low percentage of patients who have completed the Grove City Medical Center's cardiac rehab program that have experienced of a recurrent cardiac event. H_0- There was a high percentage of patients who have

completed the Grove City Medical Center's cardiac rehab program that have experienced of a recurrent cardiac event.

Definition of Terms

1. Cardiac Rehabilitation:

   According to the American Heart Association (2014),

   Cardiac rehabilitation (cardiac rehab) is a professionally supervised program to help people recover from heart attacks, heart surgery and percutaneous coronary intervention (PCI) procedures such as stenting and angioplasty. Cardiac rehab programs usually provide education and counseling services to help heart patients increase physical fitness, reduce cardiac symptoms, improve health and reduce the risk of future heart problems, including heart attack.

The purpose of this study, cardiac rehabilitation was defined as a professionally supervised program that provides education and counseling services to help patients recover from cardiac events by increasing physical fitness, reducing cardiac symptoms, improving health, and reducing the risk of future cardiac events.

The Grove City Medical Center Cardiac Rehabilitation Program patients were referred through their primary care physicians, cardiologists, and surgeons. Patients that met the criteria for the program were those who have experienced a myocardial infarction (MI), had placement of coronary stents, coronary angioplasty, valve replacement, coronary arterial by-pass surgery (CABG) and heart transplants and were considered for the program. The study, focused on patients who had an MI, stent placement, coronary angioplasty and CABG. Most major insurances and Medicaid were accepted. The patients attended the program three days a week for 12-weeks following the guidelines

set by the American Association of Cardiovascular and Pulmonary Rehabilitation. The guidelines were accepted and utilized by Medicare and private insurance companies.

The program was staffed by registered nurses; the director was a registered nurse with a background of extensive cardiac experience with the minimal of five years. All nurses were ACLS certified. A physician was in-house for daily operations. The hours of operation were Monday, Wednesday, and Friday from 0700-1100 am. The Cardiac Rehab program had a six patient capacity per session lasting one hour. The ratio of patient to nurse was six to two.

The patients were continuously monitored while participating in rehab with a three lead EKG monitor. Blood pressure monitoring was done at rest, during aerobic exercise and during cool down. Often times, patients physicians were notified for the following patient condition changes: abnormal heart rate, rhythm and blood pressure response to exercise. By the time the 12-week program was completed, the patient's medications are at proper dosage for their active lifestyle as they are recuperating from their cardiac event.

Another major component to Cardiac Rehab was patient education. The topics that were covered include cardiac anatomy, physiology, lifestyle risk factors and health promotion activities such as education on a heart healthy diet, weight loss, stress, blood pressure control, medications, smoking cessation and understanding cholesterol numbers. While physical exercise was occurring, an educational video is playing on viewing screens allowing for verbal discussion. When a patient completed the 12-week program, a final synopsis of their program was printed out and sent to their primary care physician and cardiologist.

2. Health Promotion:

According to the World Health Organization (2014), "Health promotion is the process of enabling people to increase control over and to improve their health. It moves beyond a focus on individual behavior towards a wide range of social and environmental interventions" (health topics section, para 1). Dr. Nola Pender, nurse theorist, developed the Health Promotion Model. According to Pender (2011), the purpose of this model is to assist the nurse to identify poor health behaviors for a basis of behavioral counseling to help promote healthy lifestyle changes for the patient. Therefore, for the purpose of this research was health promotion and was defined as the process of enabling people to improve their health encompassed by spiritual growth, interpersonal relations, nutrition, physical activity, health responsibility, and stress management.

Need for Study

There were several gaps in the research and literature that illustrated a strong need for this study. The correlation between completion of the Grove City Medical Center's 12-week cardiac rehab program and adherence to health promotion activities of subjects after two years was not known. Research to determine percentages of participants that experienced a recurrent cardiac event between two and five years of completion of Grove City Medical Center's cardiac rehab program was also needed to help fill the gaps in research that remain.

Significance of Problem

Limited research studies have been completed on health promotion activities with cardiac rehabilitation patients. A clear examination of the direct impact that cardiac rehab programs have on health promotion and risk factor modification improve outcomes and

to provide a framework for future cardiac rehab program development. The data collected from this study will enhance other similar programs by showing a correlation between health promotion factors, reduction of risk factors and how it applies to cardiac rehab. The nurse practitioner and other health care providers could gain knowledge in this area to provide more enhanced care for their patients. Other benefits of the study could include, lowering the rate of hospital admissions, decreasing insurance costs and decreasing recurrent cardiac events. Future patients who complete a cardiac rehab program could benefit from these research findings as well as their friends, families and any person with increase cardiac risk factors. Recommendations can now be suggested and Grove City Medical Center can now be a proven role model for other cardiac rehabilitation programs. Many people, not only those of Western Pennsylvania but outside this region will benefit from this research as it could be applied to equivalent cardiac rehabilitation programs and lower cardiac event risk factors and improve overall health.

Assumptions

I. "Persons value growth in directions viewed as positive and attempt to achieve a personally acceptable balance between change and stability," (Pender, 2011).

II. "Individuals seek to actively regulate their own behavior." (Pender, 2011).

III. "Health professionals constitute a part of the interpersonal environment, which exerts influence on persons throughout their lifespan." (Pender, 2011).

Summary of the Problem

Heart disease and cardiac events are very substantial problems in our community. Cardiac rehabilitation programs such as the program at Grove City Medical Center exists to teach health promotion and risk factor modification and to combat the increasing occurrence of a repeat cardiac event. Several gaps in literature pertaining to cardiac rehab remain, therefore this research was necessary. The results could be applied to equivalent cardiac rehabilitation programs to increase adherence to health promotion activities and lower cardiac event risk factors and reoccurrences.

Chapter 2

Review of Related Literature

A review of literature has been completed in order to determine what was known and unknown about the subject. Cardiac rehabilitation (Cardiac Rehab) was reviewed using keywords such as restoration, therapy, recovery and treatment with attention to effectiveness, lifestyle modifications and the patient's perception. Health Promotion was another topic explored in the literature review. Nutrition, physical activity, health and stress management were the keywords used to guide this review. A comprehensive literature review was completed using Cinahl Database provided by Clarion University of Pennsylvania.

Full Literature Review

Cardiac Rehab has illustrated a positive effect on lifestyle modifications immediately after the program has completed. A group of authors presented a literature review to examine the 16 studies done between 1995 and 2012. Chatziefstratiou, Giakoumidakis, and, Brokalaki (2013) explain, "The study concluded that CR improves patients' self-care; a reduction in cholesterol and body mass index was observed; in addition to this, patients intended to quit smoking and increase their exercise activity" (p. 200). The effectiveness in the ability to maintain the healthy lifestyle changes taught in a 12-week cardiac rehab program for a period of 5 years was unknown. A study by Rodgers, Murray, Selzler, & Norman (2013) suggest that, "more should be done during CR to ensure that rehabilitation participants are prepared with the skills they will need to carry on exercising outside the rehabilitation context" (p. 183). Although their study yielded very interesting and useful findings, the limitations to the research was

considered to be a relatively short follow-up period of one month after Cardiac Rehab completion. Rodger, Murray, Selzler & Norman (2013) conclude, "Future studies could usefully employ longer follow-up assessments" (p. 183). Examining the impact of Cardiac Rehab on the adherence to the learned healthy lifestyle modifications between two and five years post completion was necessary.

Quality of life improvement was a factor within the Cardiac Rehab programs. "Comprehensive cardiac rehab not only improves physical and physiological status of cardiac patients but also it influences their psychological conditions and decrease mortality and cardiovascular disease risk factor which can improve their lifestyle" (Saeidi, Mostafavi, Heidar & Masoudi, 2012, p. 179). Saeidil et al. (2012) continued, "traditional cardiac rehab programs emphasized improving physiological status and exercise endurance as well as modifying cardiac vascular disease risk factors in the state of patients' quality of life" (p. 179). An effective cardiac rehab program improves physiological status as well reduce cardiac risk factors while enhancing their quality of life.

The patient's perception was also taken into account when determining the adherence to the lifestyle changes implied by Cardiac Rehab. A quantitative and qualitative study was performed in London to determine the quality of life in patients after completing a cardiac rehab program. Unfortunately, the research did not support the author's research of benefiting patient's quality of life post participation at one year. Milligan (2012) concludes, "A number of moderating variables were suggested as explaining the finding such as homogeneity of respondents, age, mood bias and, the

timeframe of one year between participation in rehabilitation and, self-reporting" (p. 782). A demographic survey was generated in order to identify these cardiac variables. A study by Pischke, Scherwitz, Weidner, and Ornish (2008) indicated:

> There is a limited knowledge about long term effects (ie. greater than one year) of maintained lifestyle changes on psychological well-being. The goal of the study was to evaluate the long-term effects of a comprehensive lifestyle changes (i.e., diet, exercise and, stress management) on psychological well-being and, to identify associations of individual lifestyle changes with changes in specific cardiac variables in patients with CHD over five years. (p. 585)

The study concluded the relationship between health behavior changes to cardiac variables over one and five years, showed improvements in diet to weight reduction and decrease in percent diameter stenosis. However, the study acknowledges that the reductions in percent diameter stenosis could not be explained by dietary changes, but was correlated to alleviating psychological distress by practicing stress management effected the dietary changes. Stress management is a health promotion activity that has been proven to minimize the devastating symptoms of cardiac disease therefore, this factor was measured.

A literature review was performed to examine the secondary prevention or health promotion for patients with coronary heart disease. Redfern and Briffa (2011) explain, "Recent evidence suggests that more contemporary models of secondary prevention are safe and, appear to benefit patients of all ages" (p. 31). Redfern and Briffa (2011) continued to explain, "These programs complement traditional CR and provide more flexible and individualized interventions that frequently includes ongoing support over

the telephone, the internet (in limited cases) and, the provision of taped or, written supplementary materials" (p. 31).

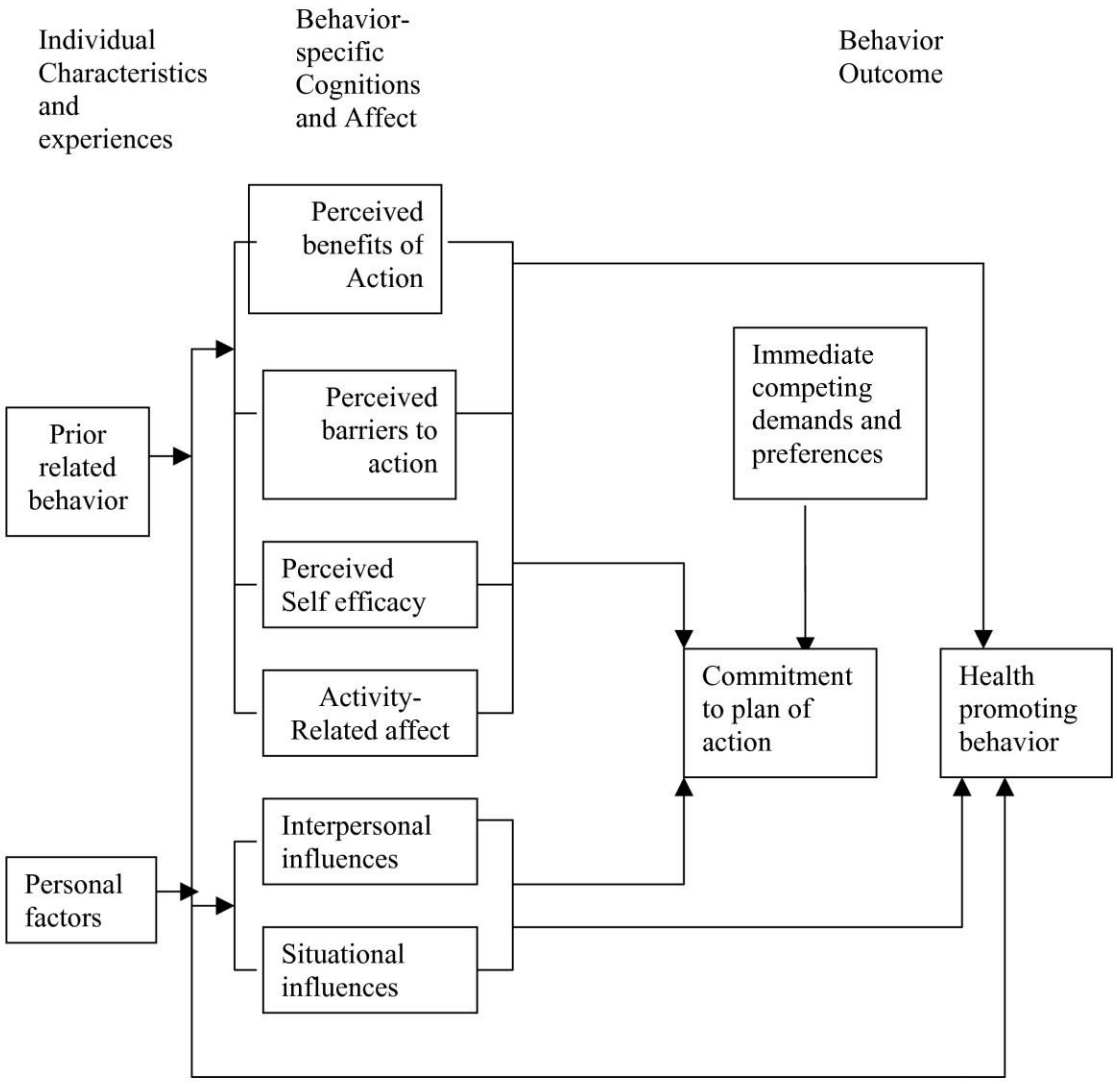
It was known that after a patient experiences one cardiac event, they are at a high risk to experience a subsequent event. Armbruster & Lim (2013) explain, "Patients with established cardiovascular disease are at high risk for future myocardial infarction, stroke, and death" (p. 154). Armbruster & Lim (2013) continue, "Interventions that may reduce recurrent cardiovascular events serve a critical role in improving both long-term morbidity and mortality" (p 154). It was found to be beneficial to determine the percentage of participants who experienced a recurrent cardiac event after completing Grove City Medical Center's cardiac rehab program.

Theoretical Framework

Nola Pender's Health Promotion Model (HPM) was used for this study. Pender's model assessed three areas; (1) individual characteristics and, experiences, (2) behavior specific cognitions and, affect, and (3) behavioral outcomes. Pender explained that each patient through life's experience has unique characteristics they possess. Pender (2011) adds the nurse can assess eight beliefs the model focuses on. There is a collaborative effort from both the nurse and patient in which the nurse can assist the patient in changing behaviors to allow for a healthier lifestyle. The secondary prevention of coronary heart disease is health promotion and education. The purpose of health promotion is to empower people to have more control of their disease and their lives (Ewles and, Simett, 2003; Stead, C.E., 2009. p. 598). Nurses are able to empower patients to take control of their disease and their lives by way of modifying their lifestyles.

Figure 1

Nola Pender's Health Promotion Model

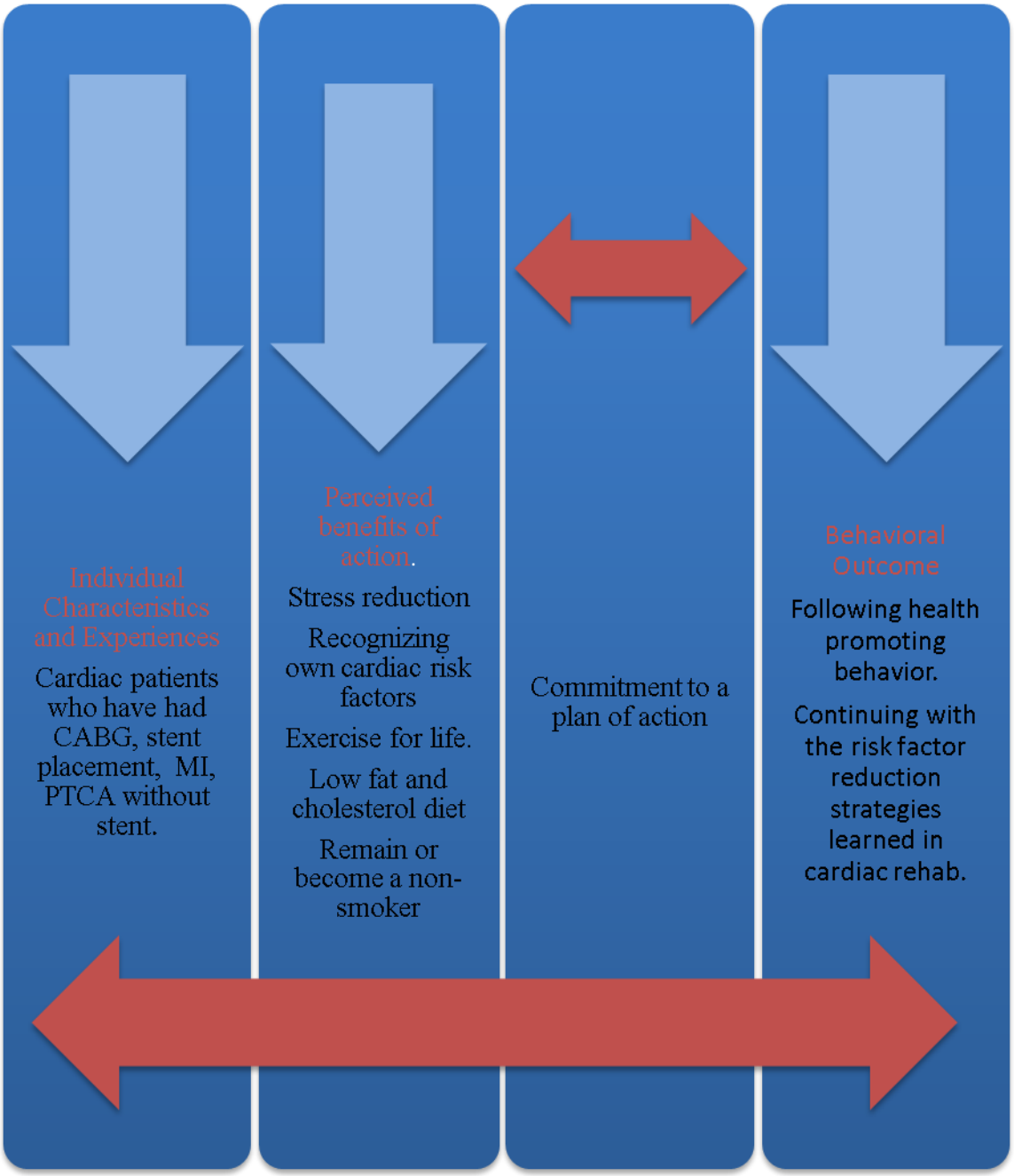


Heart disease is a debilitating and chronic disease that will not go away but can be managed. The health promotion intervention framework with a sound theoretic basis, such as Pender's health promotion model, can be effective and enhance the quality of life for patients with heart disease who have completed the cardiac rehab program. The application of the Pender model addressed the individual characteristic or problem. The

perceived benefits of action are the individual interventions to help correct the characteristic or problem. Pender's health promotion model requires commitment to facilitate the interventions in order to reduce the medical problem, such as heart disease. The outcomes of the commitment to the interventions were used to guide the continuation of the interventions. The return arrows indicate the need to look at the problem and intervention repeatedly to ensure the desired outcome was achieved.

Figure 2

Application of the Health Promotion Model to Cardiac Rehab



Explanation of the Health Promotion Model to Cardiac Rehab

Pender's Health Promotion model was created to explain it in a simplified manner in relation to the cardiac rehab program. The patients that were participants in the cardiac rehab are the ones that have the above individual characteristics and experiences: CABG, stent placement, MI, and PTCA without stent. The perceived benefits of action were the educational material that are presented and reviewed with the patients in an individual and group manner. The commitment in action was the cardiac rehab patient being committed to making the appropriate changes to their lifestyle for their cardiac health. That commitment can be a struggle for some patients. The red arrow refers to the struggle and the revisiting of their behavior modification before being able to achieve their desired outcome. The behavioral outcome was the goals that were achieved by the patients who have adapted appropriate heart healthy behaviors and maintained them. The large red arrow indicates that the patient constantly have to remain aware of their heart disease, that lifestyle behavioral changes were necessary, and their commitment to the behavioral changes was allowed for a cardiac healthy lifestyle.

Summary of Review of Related Literature

The full review of literature revealed the extent of the gaps in the research related to adherence to health promotion activities after completion of a Cardiac Rehab program. Pender's health promotion model that was used in the research allowed for application to the study.

Chapter 3

Methodology

The methodology including the design, the setting, and the sample of this study was defined in this section. The ethical considerations that were taken in the study were noted. The Health Promoting Lifestyle Profile II and a demographic and health history survey were used as instruments to collect both quantitative and qualitative data. The data was compiled and analyzed to determine if conclusive findings support or nullify the hypotheses.

Research Design

This study used a descriptive research design. The cardiac rehab patients completed the enclosed surveys and rated themselves on their adherence to health promotion and risk factor modifications since their completion of the 12-week cardiac rehab program.

Setting

The setting for this study was determined to be rural. The data collected for this research was obtained in the patient's home, office, and at their physician's office.

Sample

For this study, the total number of patients who have completed a 12-week cardiac rehabilitation program across the state of Pennsylvania from January 1, 2010 till December 31, 2012 was defined as the total population. The target population and sample selection was defined as the total number of patients who have completed a 12-week cardiac rehabilitation program at Grove City Medical Center. The process used for identifying participants for this research was convenience sampling, in which all the

participants who respond can be used for the study. The sample size was 171 as that is how many surveys that were sent out. Forty-four surveys were returned which was greater than a 20% convenience sample. Consideration was been made to send out another round of surveys as only twenty-two of the forty-four participates fit the inclusion criteria. However, due to an unexpected response from disgruntled family members and the potential to involve that family again due to the strict confidentially, a second round of surveys were not sent. The exact time period was defined as completion of the Grove City Medical Center between January 1, 2010 and December 31, 2012. The inclusion and exclusion criteria were as follows:

Inclusion Criteria:

- Eighteen years of age or older
- Complete the 12-week cardiac rehab program at Grove City Medical Center was between January 1, 2010 and December 31, 2012
- Able to read, speak or write English
- Past medical history of myocardial infarction, percutaneous coronary intervention (PTCA) with either angioplasty or stent placement or Coronary Arterial by-pass Graft (CABG) at time of cardiac rehab

Exclusion Criteria:

- Valve replacement or cardiomyopathy patients without having MI, PTCA with stent or angioplasty or CABG
- Never participated in the cardiac rehab program
- Never completed the 12-week cardiac rehab program at Grove City Medical Center

Ethical Considerations

This study was reviewed for approval by the IRB committee at Clarion University. Grove City Medical Center also agreed to grant the research team permission to use the raw data collected with parameters (see Appendix C). A consent was sent to every patient that participated in the 12-week cardiac rehab program, however return of survey was considered consent to participate in the study (see Appendix F). The staff from the Cardiac Rehab Center at Grove City Medical Center was the only ones that had access to the names, addresses, and medical information from all who had completed the 12-week cardiac rehab program between January 1, 2010 and December 31, 2012. The survey questionnaires, cover letter from Grove City Medical Center, consent agreement to participate in the study and a self-addressed stamp envelope was combined and given to the Grove City Staff. The Grove City Staff then addressed envelopes and mailed them to the subjects. The return envelopes containing the completed surveys were received to the same cardiac rehab office located within the hospital. Implied consent was assumed if the surveys are completed and returned. Once all the envelopes were opened by the staff in the Cardiac Rehabilitation Unit, the raw data was released to the research team. Only the Grove City Medical staff knew the patient's medical record number. At no time did the research team view any medical documents, names, or addresses of the subjects according to the parameters set forth by Grove City Medical Center (Appendix C).

Instrumentation

The Health-Promoting Lifestyle Profile II and a demographic survey were the instruments used in this study. The Health-Promoting Lifestyle Profile II instrument measured health promotion with six subscales including spiritual growth, interpersonal

relations, nutrition, physical activity, health responsibility, and stress management, (Walker & Hill-Polerecky, 1996). This survey consisted of 52 items and was used to measure all behaviors described above. Validity and reliability had been established for this instrument. Permission to use the Health-Promoting Lifestyle Profile II was granted by Dr. Susan Noble Walker, Professor Emeritus (see Appendix A). The original profile has been in use since 1987 and has been revised to Profile II. According to Walker and Hill-Polerecky (1996), "It continues to measure health promoting behavior, conceptualize as a multidimensional pattern of self-initiated actions and perceptions that serve to maintain or enhance the level of wellness, self-actualization and perceptions of the individual" (para 1). Walker and Hill-Polerecky (1996) explain,

> Data from 712 adults aged 18 to 92 were used to assess validity and reliability. Content validity was established by literature review and content experts' evaluation. Construct validity was supported by factor analysis that confirmed a six-dimensional structure of health-promoting lifestyle, by convergence with the Personal Lifestyle Questionnaire (r= .678), and by a non-significant correlation with social desirability. Criterion-related validity was indicated by significant correlations with concurrent measures of perceived health status and quality of life (r's = .269 to .491). The alpha coefficient of internal consistency for the total scale was .943; alpha coefficients for the subscales ranged from .793 to .872. The 3-week test-retest stability coefficient for the total scale was .892. (abstract section)

Since the cardiac rehab at Grove City Medical Center was not specifically tailored to the individual spirituality of each patient, the survey questions in the HPLP II measuring

spiritual growth will be carefully examined to exclude any invalid results. We expected to find results supportive of recommending spirituality be added as a component of the program.

A demographic and health history survey was also sent. It contained questions pertaining to gender, age, and marital status to gain a general knowledge about the subject and increase understanding about their healing process. It also contained questions regarding smoking history, prescription medications regimes, follow up appointments as well as blood pressure monitoring practices. The demographic and health history survey contained information on a recurrent cardiac event and allowed the subject to explain what they learned during the program and what they found most beneficial. This allowed for a percentage of participants who experience a recurrent cardiac event after two years of program completion to be generated.

Data Collection

Data collection was completed through mailed surveys to the participant's home. Subjects received a demographic and health history survey and Health-Promoting Lifestyle Profile II questionnaire mailed by the Grove City Medical Center staff. A cover letter from Grove City Medical Center, consent to participate in the study, and a self-addressed return envelope was also included. The patient were to read all documents, fill out the consent and surveys and return all items in the return envelope. Grove City Medical Center then compiled all the results of the consented subject's surveys and released only the raw data to the researches.

Chapter 4

Results and Discussion

The intent of this chapter is to present the results of the survey and discuss the finding in relation to the study's hypotheses. The limitations of the study will also be discussed.

Results

A total of 171 surveys were mailed out. A total of 44 survey responses (26%) were returned. Of those, 22 or 12.9% of the respondents met the inclusion criteria, were not excluded by the exclusion criteria and therefore were deemed 'qualified respondents'. Twenty-two surveys were excluded due to (a) incompletion of the survey; (b) the dates in which they participated in the cardiac rehab program fell out of the range of the inclusion criteria, or (c) incompletion of the entire 12-week cardiac rehab program.

Demographic information collected on respondents include age, gender and marital status (see Figure 3). Eleven respondents were men and eleven were women. One respondent was in the age category of 41-50, three in 51-60, 9 in 61-70, 7 in 71-80 and two over the age of 80. Fourteen of the respondents reported that they were married, one not married, five divorced, and two widowed.

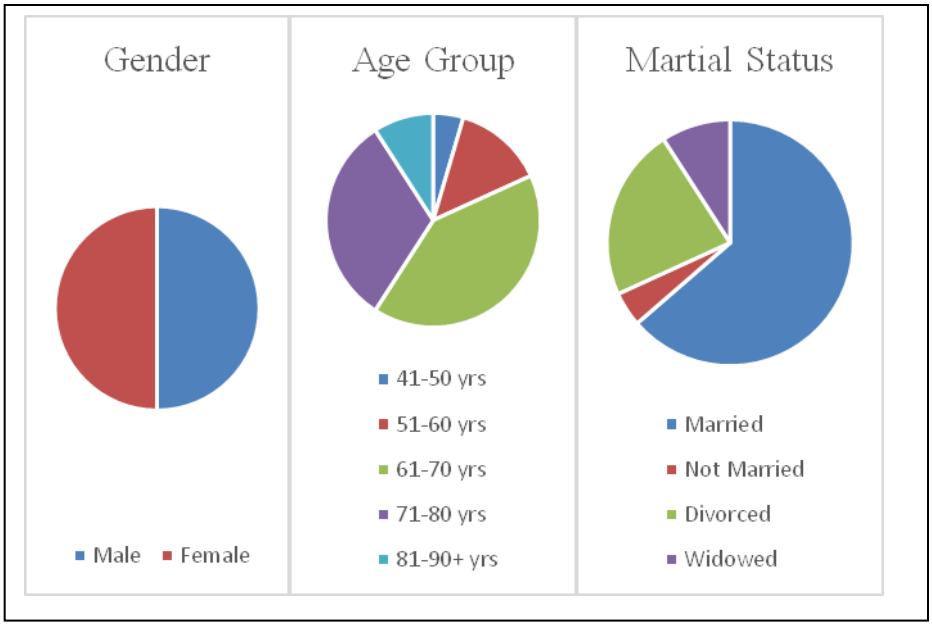


Figure 3: Demographic Results

All of the 22 respondents indicated they were prescribed some kind of medication from their cardiologist (see Figure 4). Of the 22, twelve respondents reported never missing a dose of prescribed medication, three admit to missing a dose weekly, three report to missing a dose monthly, two admit to missing a dose every couple of months, two indicated that they seldom miss a dose. Reported follow-up with their cardiologists at the following rates: Fourteen every six months, six once a year, one every three months, and one does not visit a cardiologist at the time of the survey. Respondents were asked how often they have their blood pressure checked. Nine respondents never check their blood pressure, five check it once a week, four greater than twice a week, two twice a week, one twice a day and one every couple of months.

There were eighteen respondents that indicated they exercise, nine reported they exercise at home, two exercised in a fitness center or gym, six reported a combination of home and gym, one reported at work and four do not exercise. Their favorite exercise

was also asked; nine prefer to walk or bike outside, six prefer to use a treadmill, three use a stationary bike. Fast fried food consumption frequency was reported as: sixteen eat one to two days a week, one respondent three to four days a week and one respondent over five days a week, while four never eat fast fried foods.

When asked about their tobacco history, twelve respondents reported they never smoked, four reported they continue to smoke, six reported they quit smoking (one in 1990, one in 1975, one in 1950's, one in 2012 coinciding with cardiac event in cardiac rehabilitation program completion).

All respondents were asked to identify what topic discussed during the cardiac rehabilitation program was the most informative for them. Nine indicated the importance of exercise as it relates to heart health, four indicated general heart information pertaining to function and anatomy, four indicated the importance of diet and exercise for weight management, two mentioned healthy eating habits, one responded that the program itself was educational and two respondents left this item blank.

Two participants reported a recurrent event since the rehab program completion. One male participant reported having a pacemaker installed while the attending cardiac rehabilitation program. Another man had a stent placed in 2012, completed the program to have two more stents placed in 2014. Twenty respondents indicated that they have not had a recurrent cardiac event since completion of the cardiac rehabilitation program.

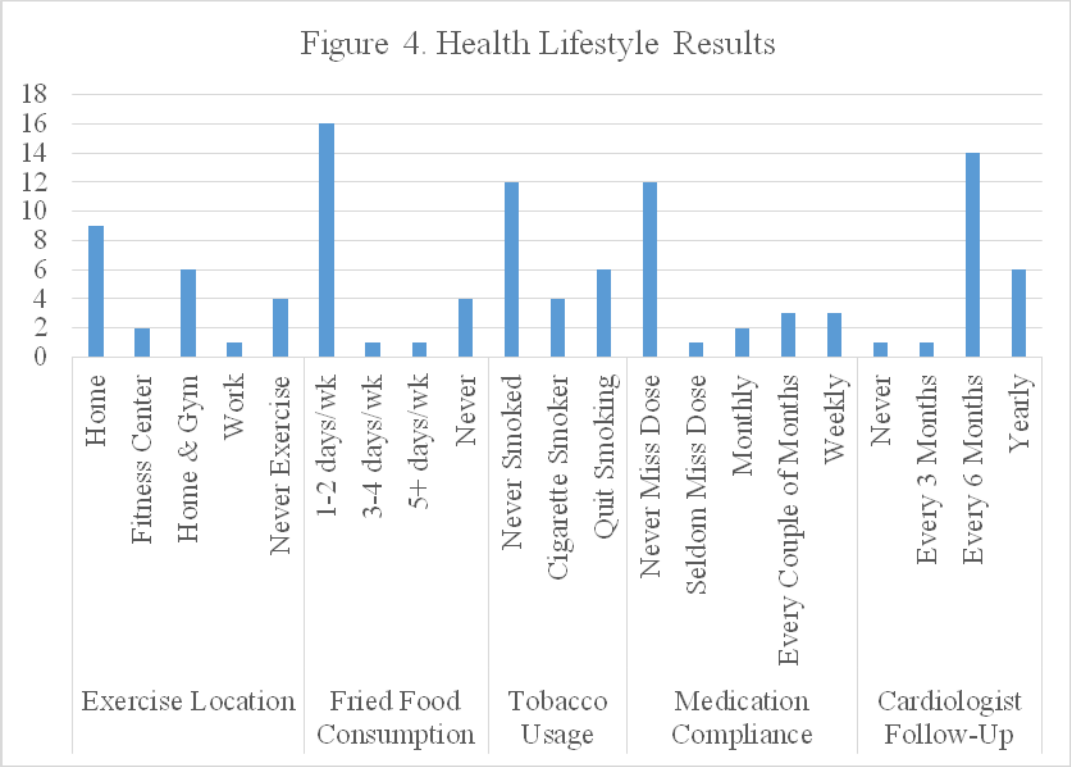


Figure 4: Lifestyle results from demographic questionairre; comparing exercise location, medication compliance, fried food consumption, tobacco useage, and Cardiologist follow up

The Health Life Style Profile II includes six subcategories and 55 questions related to these subcategories. The following pie charts depict the responses in each subcategory from the 22 respondents (see Figures 5-11).

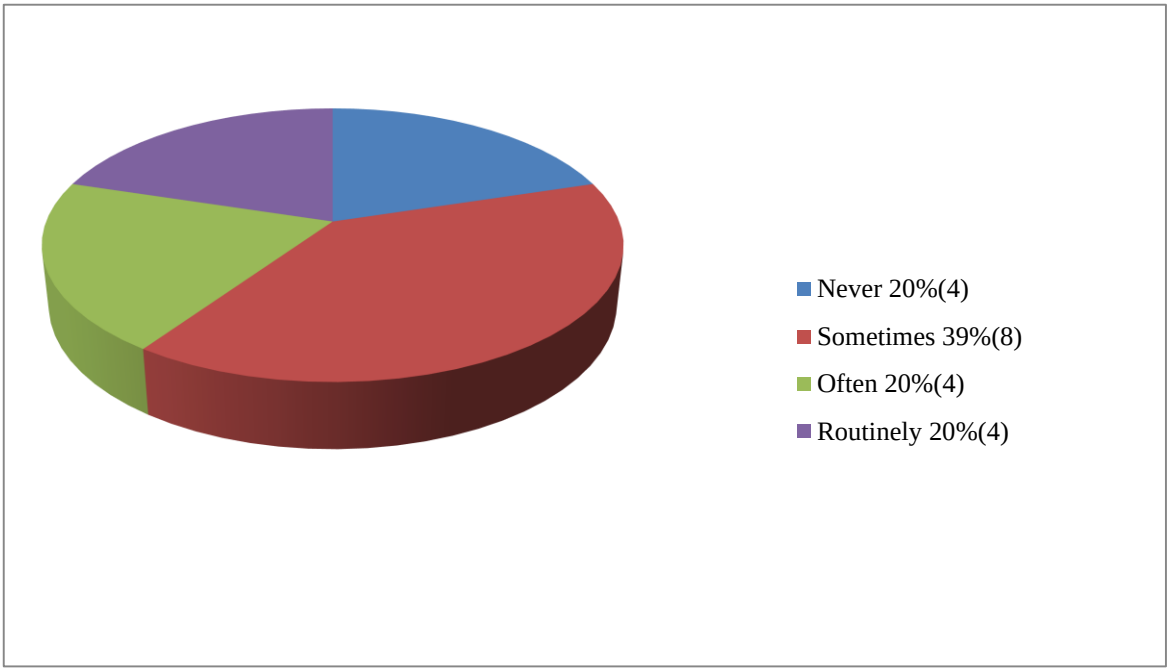


Figure 5: Health Responsibilities compares a commitment to health changes.

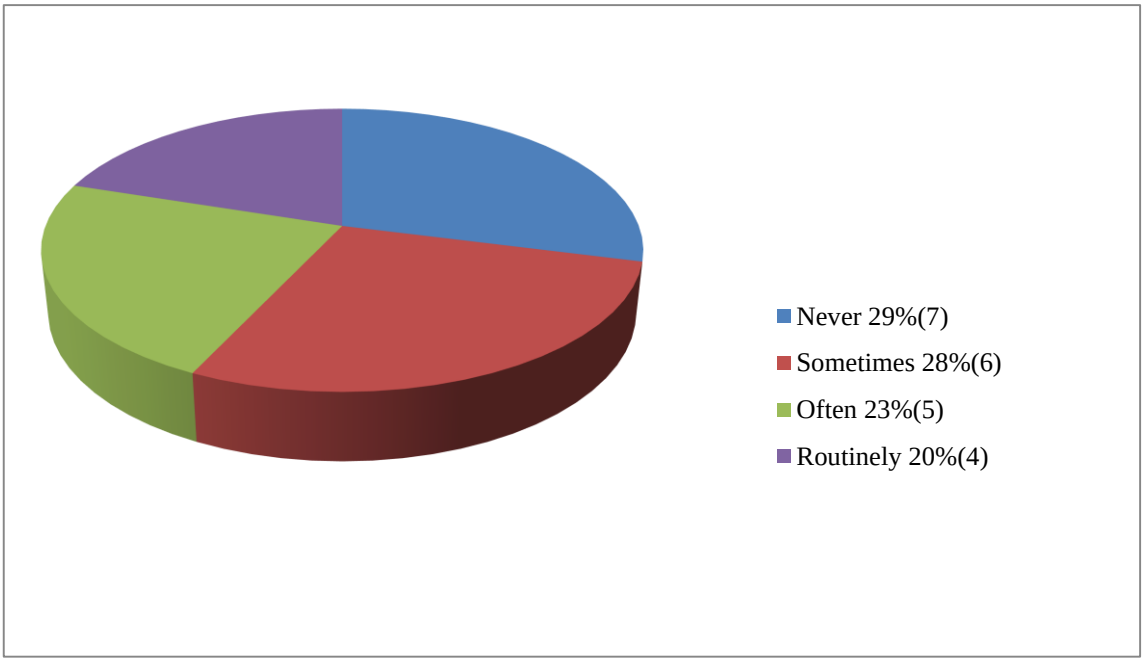


Figure 6: Physical Activity compares regular exercise pattern post cardiac event.

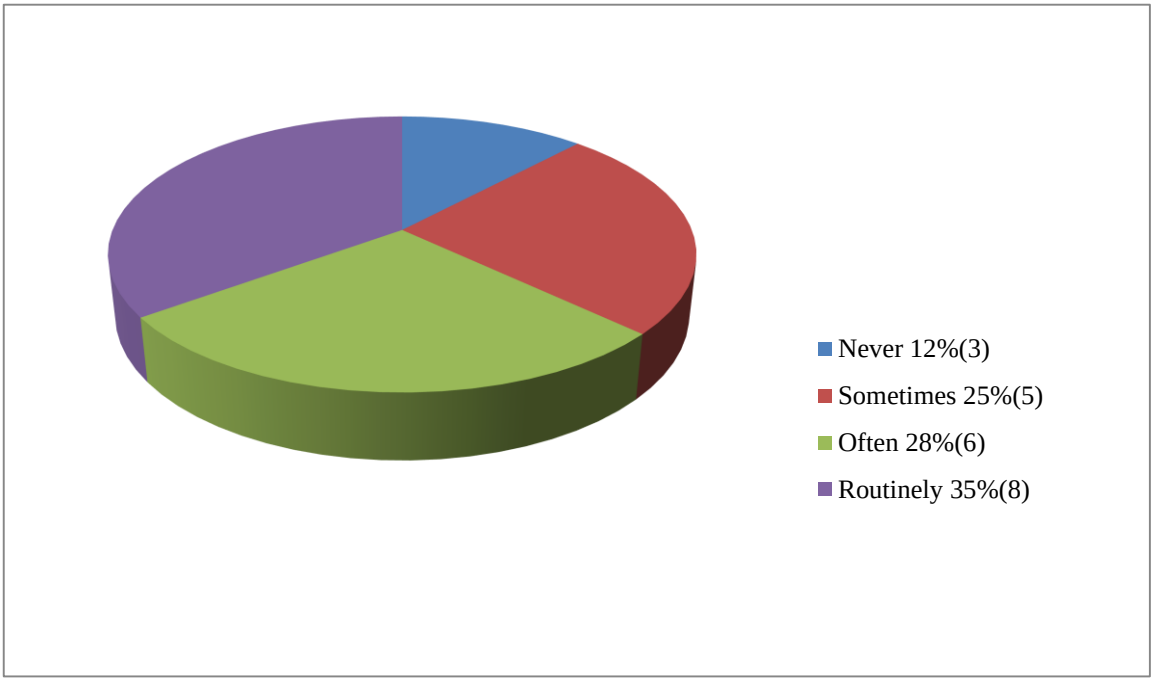


Figure 7: Nutrition compares healthy eating lifestyles post cardiac event.

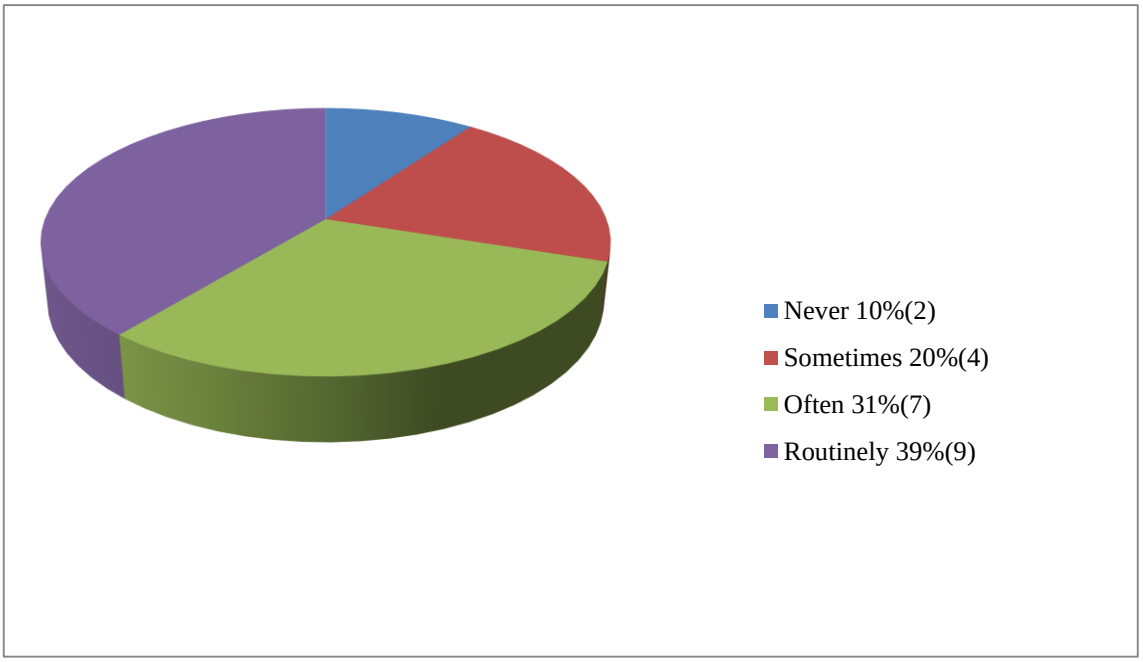


Figure 8: Spiritual Growth: Although the community based hospital does not assess spiritual growth in the cardiac rehab program, HLP II includes spirituality responses.

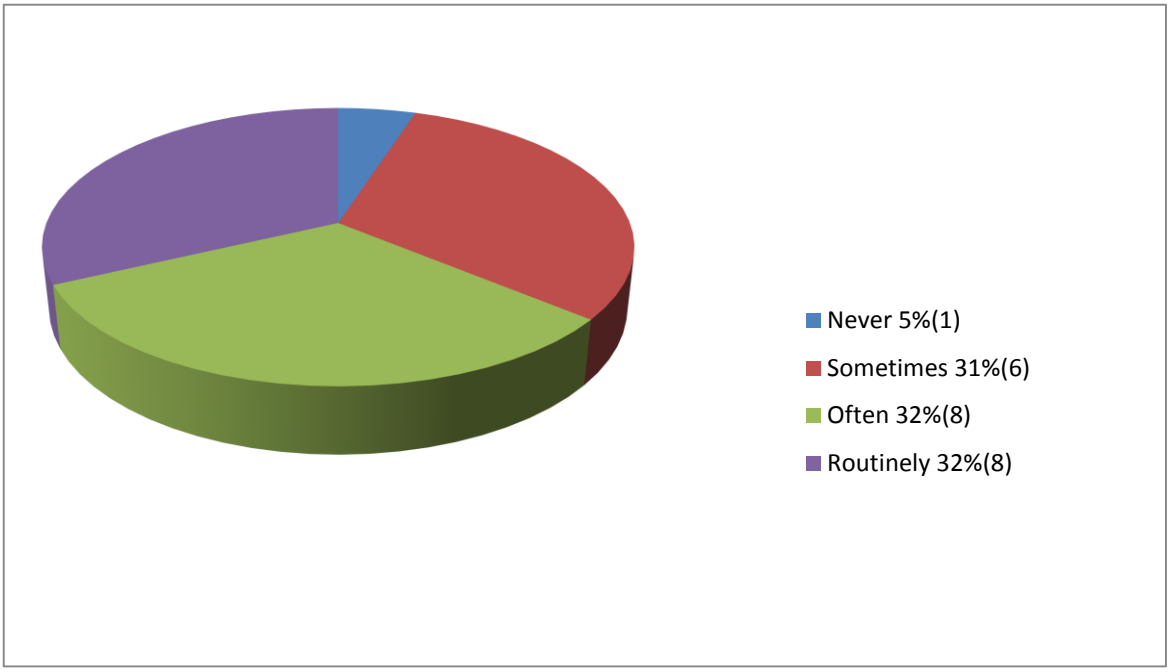


Figure 9: Interpersonal Relationships, compares support system and social interactive.

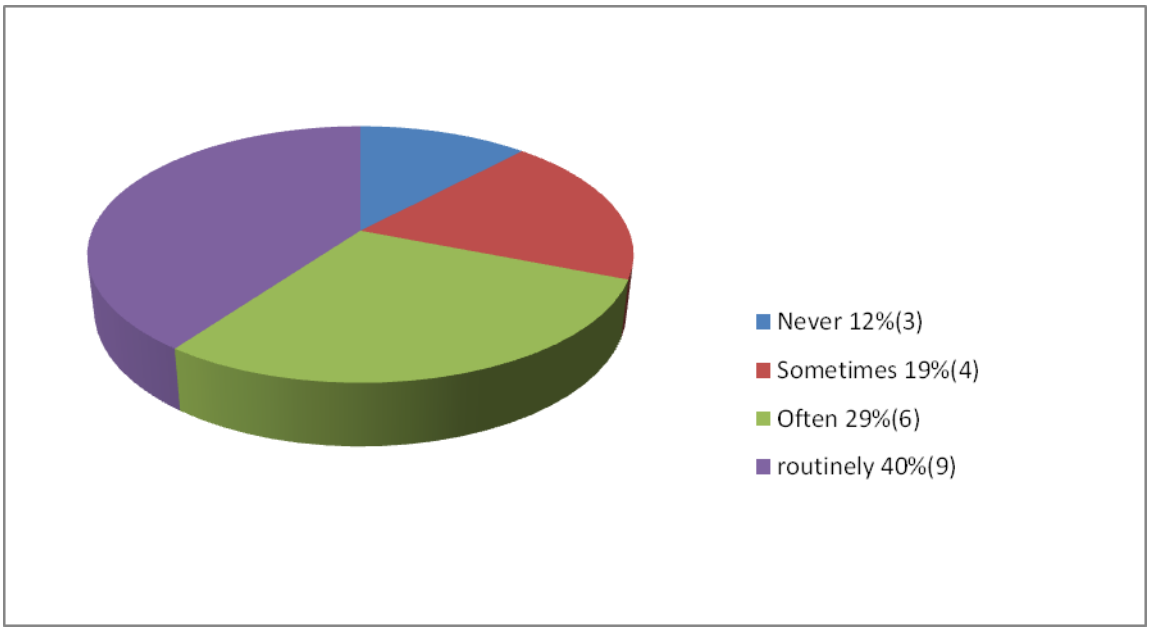


Figure 10: Stress Management, compares respondents who actively reduce stress.

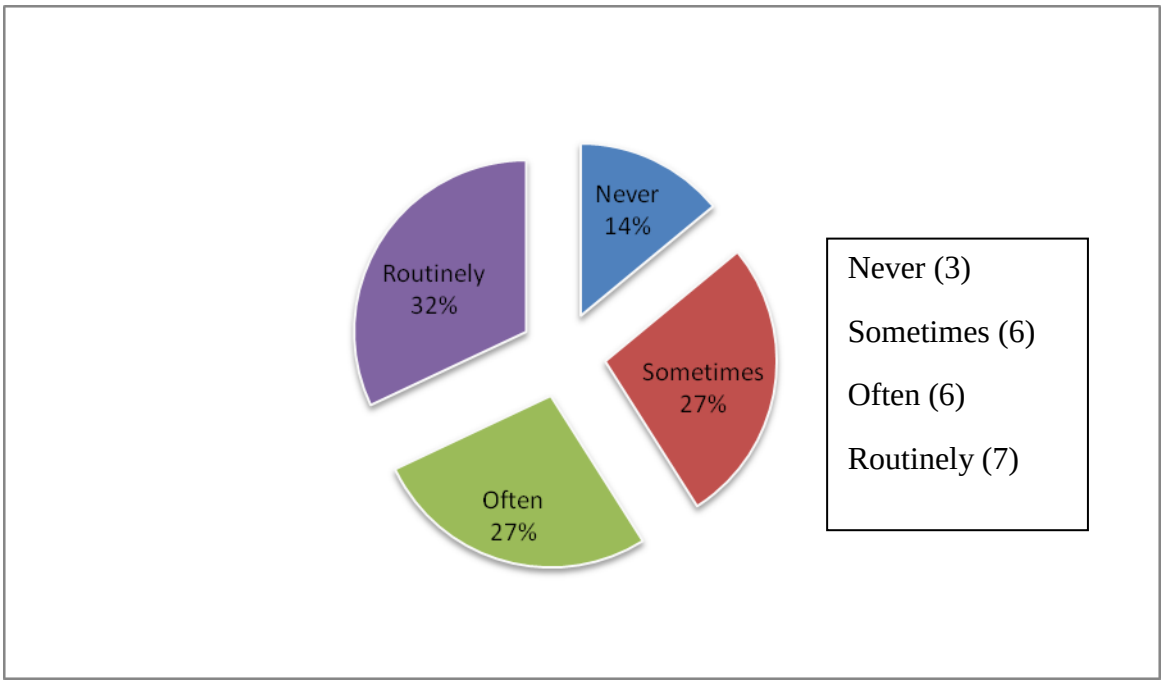


Figure 11: Lifestyle changes overall since the cardiac event.

A score for overall health promoting lifestyle was calculated for all qualified respondents based on their responses. The score is calculated as a mean response to all of the responses, with a range from 1.0 to 4.0. A higher mean indicates the respondent reported more routine and often to health promoting lifestyle questions.

Respondent	Means	Respondent	Means
1	2.46	12	3.69
2	2.4	13	2.87
3	2.81	14	1.96
4	2.73	15	1.4
5	2.46	16	2.88
6	1.98	17	2.46
7	2.46	18	2.88
8	3.04	19	2.23
9	3.06	20	3.04
10	3.25	21	3.46
11	3.54	22	3.67

Table 1: HPLP II Overall Scores

Subscale Category	Mean
Health responsibility	2.42
Physical Activity	2.34
Nutrition	2.86
Spiritual Growth	2.97
Interpersonal Relationships	2.88
Stress Management	2.97

Table 2: Subscale Category Mean scores

Discussion of results

Analysis of the scores on the health promoting lifestyle profile found the average overall health promoting lifestyle score of 2.76. As the possible score is one to four, a conclusion can be drawn that this score is higher than the mean however, without a score prior to the cardiac rehab program to directing compare scores, direct correlation is difficult to determine. Since scores were broken down into the subscales, direct

comparison can be made regarding the six subscales. The qualified respondents averaged highest in nutrition, spiritual growth, interpersonal relationships, and stress management, and averaged lowest in health responsibility and physical activity. Exploration on how to further educate and apply these two lowest averages to the patient's lifestyles could be beneficial to future participants of cardiac rehab programs.

The results of the demographic survey results indicated there is an increased understanding about their healing process through the cardiac rehab program. Results indicated an even number of men and women that were qualified respondents and most of them fit into the age group of 61-70 although each age group was represented. The majority of the respondents were married although some participates had been divorced, separated or widowed. This information allows us to validate future data as there were no other unintended trends that occurred.

As a measure of overall health and heart health, the demographic survey provided information about healthy lifestyle activities. All of the 22 respondents indicated they were prescribed some kind of medication from their cardiologist and the majority of respondents reported never missing a dose of prescribed medication. The majority of respondent's follow-up with their cardiologists every six months to once a year and the majority of them reported they check their blood pressure at least once a week. When asked about their exercise routine 16 of the 22 respondents reported they exercise one to two days a week and of those the most often reported location for exercise was at home. The majority of those exercising respondents indicated a preference to walking or biking outside. Although 16 respondents reported they consume fried food one to two days a week, four reported they never eat fried foods. When asked about their tobacco history,

twelve respondents reported they never smoked, and four reported they are continue to smoke, but six reported they quit smoking, three of which were prior to the start of their cardiac rehab program and one was determined to coincide with the cardiac rehabilitation program completion which indicate the cardiac rehab program had an impact on that decision and action to quit smoking.

Although the conclusion cannot be made that ~~all~~ adherence to healthy lifestyle changes was a result of completion of the Grove City Medical Center's cardiac rehab program, findings suggest however, a relationship with participants that completed the Grove City Medical Center's cardiac rehab program are adhering to healthy lifestyles tendencies. $H_{A:}$ There is a significant relationship between patients who have completed the Grove City Medical Center's cardiac rehab program and the adherence to healthy lifestyle changes after two years and nullify H_0: There is no significant relationship between patients who have completed the Grove City Medical Center's cardiac rehab program and the adherence to healthy lifestyle changes after two years. Due to a limited study, results suggest a significant relationship can be defined as an important link or association between the two subjects and may suggest that completing the Grove City's cardiac rehab program influences patients to adhering to a healthy lifestyle after two years. This information could be used to enhance the cardiac rehab program by including and enhancing these areas for future participants.

The most informative question for this study on the demographic survey asked about a recurrent event since the rehab program completion. One man reported having a pacemaker installed while attending cardiac rehabilitation program while another man had a stent placed in prior to starting the rehab program, then had to have two more stents

placed after completion of the program. Twenty respondents indicated that they have not had a recurrent cardiac event since completion of the cardiac rehabilitation program. This indicates with 9.09% of patients in this study had recurrent events while 90.9% of patients in this study did not have a recurrent event. This information will be directly used to assist in proving or disproving our hypotheses.

When exploring the relationship between completion of the Grove City Medical Center's cardiac rehab program and whether or not the patient experienced a recurrent cardiac event between two and five years post completion of the program, the hypotheses were as follows: H_A –There is a low percentage of patients who have completed the Grove City Medical Center's cardiac rehab program that have experienced a recurrent cardiac event. H_0- There is a high percentage of patients who have completed the Grove City Medical Center's cardiac rehab program that have experienced a recurrent cardiac event. As 9.09% is a low percentage H_A has been proven while H_0 has been disproven.

Limitations

I. Only a small sample study was obtained for this study. Consideration had been made to send out another round of surveys as only twenty-two of the forty-four returned surveys fit the inclusion criteria, however, due to an unexpected response from an upset family members this was not done. The patient is now deceased and receiving such a survey was very upsetting for the family. To avoid the potential to involve that family again due to the strict confidentially, a second round of surveys were not sent by the request of the hospital administration.

II. Grove City Medical Center's cardiac rehab program is specific to the hospital and the results of this research could only be applied to similar cardiac rehab programs.

III. Participates that completed the Grove City Medical Center's cardiac rehab program are the only subjects of this study, therefore the results of this study can only be applied to patients who have completed this or another similar cardiac rehab program.

IV. All variables that affect health promotion activities and reoccurrences of cardiac events cannot be accounted for solely by the cardiac rehab program limiting the direct association between the two factors.

V. As there are no pre-program score to compare these scores to, it is unknown if the health promoting lifestyle behaviors were a direct result of the cardiac rehab program. Careful consideration was also taken to examine the survey questions in the HPLP II measuring spiritual growth to exclude any invalid results, since the cardiac rehab at Grove City Medical Center is not specifically tailored to the individual spirituality of each patient.

Summary

The intent of this chapter was to reveal the results of the surveys and discuss the finding and interrupt them to support or nullify our hypotheses. Due to the limited number of participants, findings suggests a relationship found between patients who have completed the Grove City Medical Center's cardiac rehab program and the adherence to healthy

lifestyle changes after two years. There were also a low percentage of patients (9%) who have completed the Grove City Medical Center's cardiac rehab program that have experienced a recurrent cardiac event. The limitations to the study were also discussed.

Chapter 5

Summary, Conclusions, and Recommendations

Summary of Findings

Descriptive research is needed to examine the impact of the Grove City Medical Center's 12-week cardiac rehab program on adherence to health promotion activities of subjects after two years of completion for patients in western Pennsylvania. Research is also needed to determine percentage of participants that experienced a recurrent cardiac event after two years of completion of Grove City Medical Center's cardiac rehab program. The purpose of this descriptive research was to provide that research to examine the impact of a 12-week cardiac rehab program on health promotion activities of subjects after two years of completion of the program for patients in western Pennsylvania. What impact does completion of a 12-week cardiac rehab program have on lifestyle changes of participants in the program? Two years after completion of a cardiac rehab program, what percentage of participants experienced a recurrent cardiac event and what lifestyle changes were made?

The patients undergoing participation in this study completed the demographic and the Health Promoting Lifestyle Profile II survey's and rated themselves on health promotion activities and risk factor modifications since their completion of the 12-week cardiac rehab program. The target population and sample selection was defined as the total number of patients who have completed a 12-week cardiac rehabilitation program at Grove City Medical Center between the dates of January 1, 2010 and December 31, 2012.

Analysis of the results of the demographic survey allowed for validation of the data and to verify no unintended trends occurred. As a measure of overall health and heart health, the demographic survey provided information about healthy lifestyle activities. Although the conclusion cannot be made that all adherence to healthy lifestyle changes was a result of completion of the Grove City Medical Center's cardiac rehab program, there is evidence that suggests participants that completed the Grove City Medical Center's cardiac rehab program are adhering to healthy lifestyles tendencies.

The respondents were asked what topic discussed during the cardiac rehabilitation program was the most informative and educational could and therefore enhance the cardiac rehab program by including these areas for future participants. The majority of the participants thought the healthy eating and exercise was the most beneficial.

The most informative question for this study on the demographic survey asked about a recurrent event since the rehab program completion. Twenty of the twenty-two respondents indicated that they have not had a recurrent cardiac event since completion of the cardiac rehabilitation program. There were a low percentage of patients (9.09%) in this study that had a recurrent event while 90.9% of patients in this study did not have a recurrent event. This information was directly used to assist in support H_A: There were a low percentage of patients who have completed the Grove City Medical Center's cardiac rehab program that have experienced of a recurrent cardiac event.

Although the conclusion cannot be made that all adherence to healthy lifestyle changes were the result of completion of the Grove City Medical Center's cardiac rehab program, there is evidence that suggests participants that completed the Grove City Medical Center's cardiac rehab program are adhering to healthy lifestyles tendencies,

therefore the research supports $H_{A:}$ Due to the limited relationship between patients who have completed the Grove City Medical Center's cardiac rehab program and the adherence to healthy lifestyle changes after two years.

Implications for Nursing

Application of the findings can be applied to Grove City Medical Center's cardiac rehab program, other similar cardiac rehab programs, nursing practice and health care in general. Due to the limited number of participants, findings suggest a relationship found between patients who have completed the Grove City Medical Center's cardiac rehab program and the adherence to healthy lifestyle changes after two years. As indicated by the results of the demographic survey, the participants indicated healthy lifestyle choices which may have been a result of the cardiac rehab program. This result can be applied to similar cardiac rehab programs as well as nursing practice and overall health care in that it drives home the point that education is the key to compliance. There were also a low percentage of patients (9%) who have completed the Grove City Medical Center's cardiac rehab program that have experienced of a recurrent cardiac event. This not only suggests that Grove City Medical Center's cardiac rehab program is providing exceptional service to their participants but it encourages providers including nurse practitioners to send their patients to this or other similar cardiac rehab programs. If an increase to adherence in health promotion activities and cardiac event risk factors and reoccurrences can be lowered, health care cost could be decreased, detrimental cardiac events could be avoided and most importantly lives could be saved.

Due to an unexpected response from a disgruntled family member, a second reminder card could not be mailed out. All eligible participants were mailed out an initial

survey packet as stated between the dates of January 1, 2010 and December 31, 2012. The unfortunate situation is some of the patients are now deceased. The family of one of the participants wrote a letter to the CEO of Grove City Medical Center and expressed how unhappy he was that we would send his family member such a letter since that family member died in our facility. Receiving such a survey was very upsetting for the family and to avoid the potential to involve that family again it was decided that a second reminder not be sent. Due to this event, only a small sample size was obtained.

Recommendations for Further Research

As previously mentioned, a larger sample size, although predicted to have similar trends, should be examined to determine complete validity and vast application. All variables that affect health promotion activities and reoccurrences of cardiac events cannot be accounted for solely by the cardiac rehab program limiting the direct association between the two factors. If a more controlled environment was utilized where the participants only were influenced by the programs objectives, direct correlation would be more valid. As there are no pre-program scores to compare these scores to, it is unknown if the health promoting lifestyle behaviors were a direct result of the cardiac rehab program, therefore a recommendation for further research would be to have each participate complete both surveys prior to the start of the program and then once completion is obtained to identify direct effects of the program.

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Appendix A

University of Nebraska Medical Center

COLLEGE OF NURSING
Community-Based Health Department

985330 Nebraska Medical Center
Omaha, NE 68198-5330
402/559-6382
Fax: 402/559-6379

Dear Colleague:

Thank you for your interest in the *Health-Promoting Lifestyle Profile II*. The original *Health-Promoting Lifestyle Profile* became available in 1987 and has been used extensively since that time. Based on our own experience and feedback from multiple users, it was revised to more accurately reflect current literature and practice and to achieve balance among the subscales. The *Health-Promoting Lifestyle Profile II* continues to measure health-promoting behavior, conceptualized as a multidimensional pattern of self-initiated actions and perceptions that serve to maintain or enhance the level of wellness, self-actualization and fulfillment of the individual. The 52-item summated behavior rating scale employs a 4-point response format to measure the frequency of self-reported health-promoting behaviors in the domains of health responsibility, physical activity, nutrition, spiritual growth, interpersonal relations and stress management. It is appropriate for use in research within the framework of the Health Promotion Model (Pender, 1987), as well as for a variety of other purposes.

The development and psychometric evaluation of the English and Spanish language versions of the original instrument have been reported in:

Walker, S. N., Sechrist, K. R., & Pender, N. J. (1987). The Health-Promoting Lifestyle Profile: Development and psychometric characteristics. Nursing Research, 36(2), 76-81.

Walker, S. N., Volkan, K., Sechrist, K. R., & Pender, N. J. (1988). Health-promoting lifestyles of older adults: Comparisons with young and middle-aged adults, correlates and patterns. Advances in Nursing Science, 11(1), 76-90.

Walker, S. N., Kerr, M. J., Pender, N. J., & Sechrist, K. R. (1990). A Spanish language version of the Health-Promoting Lifestyle Profile. Nursing Research, 39(5), 268-273.

A copy of the instrument (English and Spanish versions), scoring instructions, an abstract of the psychometric findings, and a list of publications reporting research using all versions of the instrument are available for download.

Sincerely,

Susan Noble Walker, EdD, RN, FAAN
Professor Emeritus

Appendix B

GROVE CITY MEDICAL CENTER
Grove City, PA 16127-9703

CONSENT FOR PHASE II CARDIAC REHABILITATION

In order to improve my physical fitness and generally aid in my medical treatment for heart disease, I hereby consent to enter the GCMC Cardiac Rehabilitation Program that will include physical exercise, cardiovascular monitoring, and health education activities The levels of exercise that I will perform will be based on the condition of my heart and circulation as determined by my physician.

I have been informed that in the course of my participation in exercise, I will be asked to partake in activities unless such symptoms as fatigue, shortness of breath, chest discomfort, or similar occurrences appear. At that point I have been advised that it is my complete right to stop exercise and that it is **my obligation to inform the program personnel of any symptoms immediately.** Conversely, the cardiopulmonary staff may terminate exercise at any point should they deem it unsafe for me to continue.

There exists the possibility of adverse changes occurring during exercise. These include abnormal blood pressure, fainting, disorders of heart rhythm and very rare instances of heart attack. Every effort will be made to minimize these occurrences by staff assessment prior to each session and staff supervision during and after exercise. Emergency equipment and trained personnel are readily available to deal with unusual situations should they occur.

The information obtained during the rehabilitation program will be treated as privileged and confidential and will not be released to any person without my express written consent. Information may be used for scientific or statistical evaluation as long as this does not identify my person or provide facts that could lead to my identification. Only the program staff may use information obtained in order to plan my rehabilitation program or to consult with a physician regarding my condition.

I have read the foregoing and understand it. Any questions which I have conveyed have been answered to my satisfaction. My consent is voluntarily given and uncoerced. I agree to the rendition of all services and procedures as explained herein by program personnel.

_____
Patient's signature Date/Time

_____
Witness Date/Time

Form 31-0009 09-06R

Appendix C

GROVE CITY
MEDICAL CENTER

October 30, 2014

Chris Motta, R.N.
Grove City Medical Center
631 North Broad Street Ext.
Grove City, PA 16127-9703

Dear Mr. Motta,

In order to pursue your proposed study, I am recommending the following changes:

- The Cardiac Rehabilitation Program will coordinate the distribution of the survey tool with an accompanying letter of explanation from Grove City Medical Center.

- Enclosed with the letter will be a copy of your survey, any Clarion University required consent form and a self-addressed stamped envelope addressed to Grove City Medical Center Cardiac Rehab Program.

- Upon receipt of any completed questionnaire, the Cardiac Rehab Program will provide to you the completed questionnaire for analysis.

- For the purpose of any presentations, the name Grove City Medical Center should not be used.

We are proposing this methodology for obtaining information as it will provide anonymity for any past patient who wishes to participate.

If you are willing to follow these parameters, Grove City Medical Center is prepared to assist you with your study.

If you have any questions, please feel free to contact me at 724-450-7197.

Sincerely,

Robert C. Jackson, Jr.
Chief Executive Officer

cc: T. Bono, RN, VP, Nursing
Joanne Markovich, RN

Appendix D

Demographic and Health History Survey

1. **Gender**
   - Male
   - Female
2. **Age**
   - 20-30
   - 31-40
   - 41-50
   - 51-60
   - 61-70
   - 71-80
   - 81-90
3. **Marital Status**
   - Yes
   - No
   - Divorced
   - Separated
   - Widowed
4. **What was your original cardiac diagnosis for which you received cardiac rehabilitation?**

---

5. **When did you complete the cardiac rehabilitation program?**

---

6. **What is your favorite type of exercise?**
   - stationary bike
   - treadmill
   - elliptical
   - water rower
   - recumbent bike
   - walking outside
   - biking outside
   - I don't exercise

7. **Where do you exercise?**
   - Home
   - Gym
   - I don't exercise

8. **How often do you eat fried foods?**
   - 1 -2 days a week
   - 3-4 days a week
   - 5 or more days a week
   - Never

9. **Tobacco history:**
   - Currently smoke (check all that apply)

    - cigarettes
    - smokeless tobacco
    - cigars
    - pipe
    - other_____
  - Quit smoking
    - Month and Year_____
  - Have never smoked

10. **Are you currently prescribed medications by your healthcare provider(s)?**
  - Yes
  - No

11. **How often do you miss medication doses?**
  - Daily
  - Weekly
  - Monthly

12. **How often do you follow up with your cardiologist?**
  - Once a year
  - Every 6 months
  - Never

13. **How often do you check your blood pressure or heart rate?**
  - Once a day
  - Once a week
  - Twice a week
  - Greater than twice a week
  - Never

14. **Did you complete the 12-week cardiac rehabilitation program at Grove City Medical Center?**
  - Yes
  - No

15. **Have you experienced a cardiac event since completion of the Grove City Medical Center Cardiac Rehabilitation Program such as heart attack, stent placement, coronary angioplasty, and CABG(heart surgery)?**
  - Yes, I have experienced at least one of these. Event _____Year_____.
  - No, I have not experience any of these.

16. **What was the most beneficial educational topic you learned about in the Cardiac Rehabilitation Program?** ***Please write response***

_____

Appendix E

LIFESTYLE PROFILE II

DIRECTIONS: This questionnaire contains statements about your *present* way of life or personal habits. Please respond to each item as accurately as possible, and try not to skip any item. Indicate the frequency with which you engage in each behavior by circling:

N for never, **S** for sometimes, **O** for often, or **R** for routinely

		NEVER	SOMETIMES	OFTEN	ROUTINELY
1.	Discuss my problems and concerns with people close to me.	N	S	O	R
2.	Choose a diet low in fat, saturated fat, and cholesterol.	N	S	O	R
3.	Report any unusual signs or symptoms to a physician or other health professional.	N	S	O	R
4.	Follow a planned exercise program.	N	S	O	R
5.	Get enough sleep.	N	S	O	R
6.	Feel I am growing and changing in positive ways.	**N**	S	O	R
7.	Praise other people easily for their achievements.	N	S	O	R
8.	Limit use of sugars and food containing sugar (sweets).	N	S	O	R
9.	Read or watch TV programs about improving health.	N	S	O	R
10.	Exercise vigorously for 20 or more minutes at least three times a week (such as brisk walking, bicycling, aerobic dancing, using a stair climber).	N	S	O	R
11.	Take some time for relaxation each day.	N	S	O	R
12.	Believe that my life has purpose.	N	S	O	R
13.	Maintain meaningful and fulfilling relationships with others.	N	S	O	R
14.	Eat 6-11 servings of bread, cereal, rice and pasta each day.	N	S	O	R
15.	Question health professionals in order to understand their instructions.	N	S	O	R
16.	Take part in light to moderate physical activity (such as sustained walking 30-40 minutes 5 or more times a week).	N	S	O	R
17.	Accept those things in my life which I can not change.	N	S	O	R
18.	Look forward to the future.	N	S	O	R
19.	Spend time with close friends.	N	S	O	R
20.	Eat 2-4 servings of fruit each day.	N	S	O	R
21.	Get a second opinion when I question my health care provider's advice.	N	S	O	R
22.	Take part in leisure-time (recreational) physical activities (such as swimming, dancing, bicycling).	N	S	O	R
23.	Concentrate on pleasant thoughts at bedtime.	N	S	O	R
24.	Feel content and at peace with myself.	N	S	O	R
25.	Find it easy to show concern, love and warmth to others.	N	S	O	R

	NEVER	SOMETIMES	OFTEN	ROUTINELY
26. Eat 3-5 servings of vegetables each day.	N	S	O	R
27. Discuss my health concerns with health professionals.	N	S	O	R
28. Do stretching exercises at least 3 times per week.	N	S	O	R
29. Use specific methods to control my stress.	N	S	O	R
30. Work toward long-term goals in my life.	N	S	O	R
31. Touch and am touched by people I care about.	N	S	O	R
32. Eat 2-3 servings of milk, yogurt or cheese each day.	N	S	O	R
33. Inspect my body at least monthly for physical changes/danger signs.	N	S	O	R
34. Get exercise during usual daily activities (such as walking during lunch, using stairs instead of elevators, parking car away from destination and walking).	N	S	O	R
35. Balance time between work and play.	N	S	O	R
36. Find each day interesting and challenging.	N	S	O	R
37. Find ways to meet my needs for intimacy.	N	S	O	R
38. Eat only 2-3 servings from the meat, poultry, fish, dried beans, eggs, and nuts group each day.	N	S	O	R
39. Ask for information from health professionals about how to take good care of myself.	N	S	O	R
40. Check my pulse rate when exercising.	N	S	O	R
41. Practice relaxation or meditation for 15-20 minutes daily.	N	S	O	R
42. Am aware of what is important to me in life.	N	S	O	R
43. Get support from a network of caring people.	N	S	O	R
44. Read labels to identify nutrients, fats, and sodium content in packaged food.	N	S	O	R
45. Attend educational programs on personal health care.	N	S	O	R
46. Reach my target heart rate when exercising.	N	S	O	R
47. Pace myself to prevent tiredness.	N	S	O	R
48. Feel connected with some force greater than myself.	N	S	O	R
49. Settle conflicts with others through discussion and compromise.	N	S	O	R
50. Eat breakfast.	N	S	O	R
51. Seek guidance or counseling when necessary.	N	S	O	R
52. Expose myself to new experiences and challenges.	N	S	O	R

Appendix F

Participation for Research Consent

UNIVERSITY AFFILIATION: Clarion University of PA Administrative Office, 108 Carrier, Administration Building, Clarion, PA 16214, 814-393-2337

Title: Impact of a 12-week Cardiac Rehabilitation Program on Health Promotion.

Principal Investigator: Christopher Motta, BSN, RN. 632 North Broad Street Ext. Grove City, Pa, 16127. cmotta@gcmcpa.org

Sherry Patton, BSN, RN, 632 North Broad Street Ext. Grove City, Pa, 16127. spatton@gcmcpa.org

Krista Falk, BSN, RN, 32-37 Central Ave, Wellsboro, PA 16901 k.m.mack@eagle.clarion.edu

Description: I understand that I have been asked to participate in this research project which is the study of the impact of a 12-week cardiac rehabilitation program on health promotion. Approximately 200 hundred men and women aged 18-99 will be asked to participate in this study because they have completed the cardiac rehabilitation program at Grove City Medical Center between January 1 2010 and December 31 2012. I will fill out and return to Grove City Medical Center Cardiac Rehabilitation program the two surveys. After this mailing, there will be no follow up phone calls or letters.

Risks and Benefits: There are no foreseeable risks or personal benefits involved in completing this research questionnaire. The findings and the recommendations from this study may improve cardiac rehabilitation programs for other cardiac patients.

Cost and Payment: There is no cost or payment to me.

Confidentiality: I understand that any information about me obtained from this research will be kept strictly confidential. Only the employees of the Cardiac Rehabilitation at Grove City Medical Center will have access to my past file. All raw data will be kept in a locked file and only accessed by the research team. The raw data will be shredded and properly disposed of after results can be concluded, not to exceed one year. My identity will not be revealed to the research team at any time and therefore, I consent to the research questionnaire.

Right to Refuse or End Participation: I understand that I may refuse to participate in this study by not completing the questionnaire. I also know that I may be excluded from the research project by the investigators or withdraw my consent at any time. Returning the survey will serve as consent to participate.

Signature of Investigator:

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IRB Research Approval Number: #20-14-15