

ABSTRACT

LIVED EXPERIENCES OF WOMEN PRIOR TO THE DIAGNOSIS OF ACUTE CORONARY SYNDROME

By Tracey Zollar

Cardiovascular disease is the leading cause of death in women and the primary cause of women's disability in the U.S. today. Acute coronary syndrome is inadequate blood flow through the coronary arteries that supply blood to the heart muscle. This can result in damage to the heart muscle or death. In the past, studies generally excluded the female population. Recent studies have shown that there are some significant differences between men and women regarding clinical presentation, signs and symptoms, diagnosis, and treatment of coronary artery disease (CAD). The purpose of this qualitative, phenomenological study was to describe the lived experiences of women prior to the diagnosis of acute coronary syndrome (ACS). This study provided information to better understand the prodromal and acute symptoms that women have prior to ACS.

The theoretical framework for this study was based on Newman's 1999 nursing theory of Health as Expanding Consciousness. Nurse practitioners from a northeastern Wisconsin clinic helped to identify subjects who fit the criteria and who were willing to participate in the study. Data were collected through unstructured interviews that asked adult female participants to respond to the following open-ended questions:

1. Tell me about your experience when you had your heart attack.
2. How was your life before you had your heart attack?
3. Did you have any new or unusual symptoms prior to your heart attack that you believe were associated with your heart attack?
4. What symptoms did you experience during your heart attack and how severe were these symptoms?
5. Has your life changed since this experience?

The participants were interviewed either in their home or in the clinic office. The participants decided on the location. The researcher explained the study and obtained written consent prior to the interview process. The interviews were audiotaped and transcribed verbatim. The researcher also developed a demographic questionnaire that was given to each participant to complete immediately prior to the interview. The interviews lasted approximately 1 hour.

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by

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TABLE OF CONTENTS

	Page
CHAPTER I – INTRODUCTION	1
Background and Statistics	2
Gender Neutral Research	3
Clinical Presentation of Illness	4
Significance of the Study	6
Problem Statement	7
Purpose of the Study	8
Research Question	8
Definitions of Terms	8
Conceptual Definitions	8
Operational Definitions	9
Assumptions	9
Summary	10
CHAPTER II – THEORETICAL FRAMEWORK AND LITERATURE REVIEW	11
Introduction	11
Theoretical Framework	11
Case Study	14
Literature Review	15
Introduction	15
Prodromal Symptoms	16
Angina/Acute Symptoms	17
General Studies on CAD	19
Summary	20
CHAPTER III – METHODOLOGY	22
Introduction	22
Research Design	22
Population, Sample and Setting	22
Data Collection Instruments	23
Reliability and Validity	24
Data Collection Procedures	25
Protection of Human Participants	26
Pilot Study	26
Data Analysis Procedures	26
Limitations	27
Summary	28

TABLE OF CONTENTS (Continued)

	Page
CHAPTER IV – RESULTS AND DISCUSSION	29
Introduction.....	29
Demographic Data.....	29
The Interview Process	29
Results and Discussion	30
Prodromal Time Period.....	30
Denial	31
Unanswered Questions.....	32
Acute Time Period.....	33
Awareness.....	34
Seeking Medical Advice.....	34
Recognition.....	35
Summary	36
CHAPTER V – SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....	37
Introduction.....	37
Summary	37
Conclusions	42
Implications for Nursing Practice.....	43
Implications for Research	44
Chapter Summary.....	44
APPENDIXES	
Appendix A: Demographic Questionnaire	45
Appendix B: Information and Informed Consent.....	48
Appendix C: UW Oshkosh IRB Approval Letter	51
Appendix D: Bellin Institutional Review Board Approval Letter.....	53
BIBLIOGRAPHY	55

CHAPTER I

INTRODUCTION

Coronary artery disease (CAD) is the leading cause of death in both men and women; however, few women feel that heart disease could affect them (Miracle, 2006). Coronary artery disease is not a disease that affects only the male population. One out of every 2.5 women will die from heart disease, and women are more likely than men to die after an acute coronary event (McSweeney, Lefler, & Crowder, 2005). A survey conducted in 2003 by the American Heart Association (AHA) indicated that only 13% of women felt heart disease was a major threat to women (Hayes, 2006). Women usually develop CAD 9 years later than men. Yet once the disease develops, women have a much higher long-term mortality and morbidity rate (Efre, 2004).

There are three reasons that women have a higher morbidity and mortality rate than men following an acute coronary event:

1. Women do not feel that they are at risk for CAD. "Despite all the media attention and the efforts to educate the public by various health organizations, there is still a misconception among many that women do not have CAD or do not get CAD until a later age" (Miracle, 2006, p. 209). In 2004, only 7% of women in the U.S. believed that CAD was their largest health risk (McSweeney, O'Sullivan, Cody, & Crane, 2005).
2. Women experience different symptoms than men prior to an acute coronary event. Since women do not always experience the classic chest pain that most people associate with CAD, they often feel that their symptoms are

insignificant and ignore them (McSweeney, Lefler et al., 2005). This lack of awareness can lead to an increase in the time between the onset of symptoms and presentation to a health care facility, thereby increasing complications that could have been prevented with early identification and early interventions (Miracle, 2006).

3. When women do decide to seek health care, they are often misdiagnosed by health care providers due to the atypical nature of their symptoms (McSweeney, Lefler et al., 2005). Even if health care providers order diagnostic tests to assess for coronary disease, "The tests themselves are based on the physiology of a man's heart and often lack sensitivity and specificity to detect [this disease in women]" (McSweeney, Lefler et al., p. 48).

Background and Statistics

Cardiovascular disease is the leading cause of death in women in the U.S. today (Eastwood & Doering, 2005) and is the primary cause of disability in the U.S. for women over the age of 40 (McSweeney, Cody & Crane, 2001). This year alone approximately 700,000 Americans will have a new coronary event and approximately 500,000 Americans will have a repeat coronary event (AHA, 2007). Cardiovascular disease is less prevalent in women prior to menopause, yet the risk increases to that of men after menopause (Chambers, Bagai, & Ivascu, 2007). "As many as one in eight women age 45 to 54 has clinical evidence of CAD, with the prevalence increasing to one in three women older than 65" (Eastwood & Doering, p. 340). Although women lag behind men

in developing CAD, research shows that women who are under the age 50 are two times more likely than men to die after an acute myocardial event (Miller, 2002).

The term *cardiovascular disease* pertains to all conditions that involve the heart and blood vessels, including CAD, stroke and peripheral vascular disease (Cash-Smith, 2002). "Coronary artery disease involves the obstruction of adequate blood flow through the coronary arteries which supply blood to the heart muscle. The obstruction may be caused by a clot, a blockage built up over time, or a coronary vessel spasm" (Cash-Smith, p. 443). Atherosclerosis is "characterized by atheromatous deposits in and fibrosis of the inner layer of the arteries. . . . It occurs when fat, cholesterol, and other substances build up in the walls of arteries and form hard substances called plaque (Healthline, 2007, p. 1). Acute coronary syndrome includes a variety of diagnoses including ischemic heart conditions, unstable angina, non-STE-segment elevation myocardial infarction and ST-segment elevation myocardial infarction (Sperdelozzi, Baroletti, & Fanikos, 2007).

The estimated cost of cardiovascular disease in the U.S. in 2006 alone was \$403 billion, which is more than twice the cost of cancer, the second highest cause of death in the U.S. (Sperdelozzi et al., 2007). The indirect costs associated with coronary heart disease due to loss of work and other productivity is also extremely high. "As the life expectancy for women rises . . . both the prevalence and incidence of CAD is expected to markedly increase over the next several decades" (Chambers et al., 2007).

Gender Neutral Research

Historically, research related to CAD included only men. Research has failed to adequately address how CAD impacts women (O'Donnell, Condell, & Begley, 2004). The reasons given to exclude women from research were the menstrual cycle, the belief

that experimental procedures on women could expose fetuses to harm, and that homogenous sampling of males provided greater statistical analysis (O'Donnell et al.). In 1990, the Women's Health Equality Act was passed mandating that women be included in studies (Efre, 2004).

The number of women included in research studies has increased over the last 20 years, but there is still an underrepresentation of women (Efre, 2004). A review of quantitative literature done by Efre reveals a study done in 2001 by Sheps, Kaufmann and Sheffield where the primary focus of the study was differences in chest pain between men and women; however, the study of 196 patients only consisted of 26 females (Efre). A quantitative study by Wegmann, Sutsch, Rickli, Siefert, Muntwyler, Luscher, Kiowski and Jost (2003) assessed the accuracy of cardiologists in diagnosing CAD between men and women. Of the 144 participants, only 47 were female.

A review of the qualitative literature on CAD by Emslie (2002) clearly revealed a dominance of studies on the male population. This review of literature indicated that prior to the 1990s the majority of studies excluded females from their sample. A review of literature by Rosenfeld (2006) revealed that from 1966 to 1990 the percentage of women in randomized trials was 20%, increasing to 25% from 1991 to 2000. In 1990, Johnson and Morse (1990) studied an equal number of men and women. In 1994, Thomas (Emslie, 2002) conducted the first qualitative study solely on the female population. Pattenden, Watt, Lewin and Stanford (2002) examined the decision-making process of patients (20 males, 2 females) with symptoms of acute myocardial infarction.

Clinical Presentation of Illness

Cardiovascular disease has been a mainstay in research, yet it continues to be the primary cause of death among men and women. Health care providers do not

"recognize and subsequently treat early warning or prodromal symptoms of coronary heart disease [in women]" (McSweeney, O'Sullivan et al., 2005, p. 59). The classic symptoms of myocardial infarction (MI), based on research done on males, has been defined as crushing chest pain that may radiate to the jaw, neck or arms; diaphoresis; shortness of breath; and nausea (DeVon & Ryan, 2005). Women are more likely to present with what are considered atypical symptoms, such as "intrascapular, right arm, epigastric or intermammary pain as well as associated nausea, fatigue and shortness of breath" (O'Donnell et al., 2004, p. 119). These symptoms are described as atypical because they are being compared to the symptoms that men have reported prior to an acute coronary event.

Women are more likely than men to have prodromal symptoms prior to an upcoming cardiac event. Prodromal symptoms are those symptoms that "appear intermittently before and changed in frequency or intensity after their myocardial infarction (McSweeney et al., 2001, p. 27). A qualitative study by McSweeney et al. of 76 women between 6 and 15 months post-MI, revealed that 68 of these women had experienced prodromal symptoms. The most frequent prodromal symptoms included fatigue, shortness of breath, pain in upper back and indigestion (McSweeney, et al.). McSweeney and Crane (2000) conducted a qualitative study of 515 women who were interviewed up to 6 months after hospitalization. Results showed that the most frequently experienced prodromal symptoms were severe fatigue, sleep problems and shortness of breath. About 30% of the women stated they experienced chest pain during the prodromal period. The prodromal symptoms that occur in women are not thoroughly understood and have been typically ignored by both the health care provider and the patient.

In 1949, the Framingham Heart Study (FHS), a prospective longitudinal epidemiologic investigation, was developed (Kannel, 2002) to try to understand why certain people develop heart disease (Bussoletti, 2003). This study provided a wealth of observational data over the last 30 years and has shown an overwhelming difference between the clinical presentation of CAD and gender. The original cohort consisted of 5,209 White male and female participants living in Framingham, MA (Bussoletti). Half of the women over the age of 65 diagnosed with an MI had symptoms that were not detected by themselves or their physicians, while this occurred in 27% of the men in the study (Kannel). The Framingham study also suggested that women with chest pain as a primary symptom were less likely to have significant CAD than men, dispelling the myth that angina is insignificant in women (Kannel).

Significance of the Study

Coronary artery disease is the leading cause of death in women (Eastwood & Doering, 2005). "Acute coronary syndrome is a major cause of hospitalizations and emergency room visits in the United States and represents a significant burden to the healthcare system" (Sperdelozzi et al., 2007, p. 150). Women are twice as likely as men to die after an acute myocardial event (Miller, 2002). Since there is a disparity between men and women in outcomes after an acute coronary event, this supports the need for a better understanding of the symptoms that women experience prior to an acute myocardial event. "Rapid identification of cardiac warning signs/symptoms is vital for getting women into the health care system for treatment" (Miller, p. 18). If health care providers do not recognize the prodromal and acute symptoms that women experience prior to an acute cardiac event, this can lead to an increased time between onset of

symptoms and presentation to a health care facility. This can thereby increase the complications that can occur, e.g., sudden death. It has been shown that 64% of the women who experience sudden cardiac death had no warning signs or symptoms that were recognized as cardiac symptoms either by themselves or their health care providers (McSweeney et al., 2001).

The significance of CAD in women can be specifically incorporated into the practice of primary health care. The nurse practitioner (NP) may be the first person to evaluate a woman with new symptoms and should be able to recognize both prodromal and acute symptoms of CAD. The NP is also responsible for the referral of these patients to appropriate resources for diagnosis, treatment, education and support. The NP needs to be aware of the specific differences in the clinical presentation of CAD in women so that they can secure quick and appropriate health care for their patients. Nurse practitioners also play a critical role in educating their patients and the general population on the danger of CAD in women.

Problem Statement

Most research has been done on the acute symptoms that occur immediately preceding the diagnosis of acute coronary syndrome (ACS), yet there is only limited research available regarding the prodromal symptoms that women experience prior to an acute myocardial event (Eastwood & Doering, 2005). In the past, heart disease was ascribed only to men and then applied to women without looking at the physiological differences between the genders. "The prodromal period is crucial because if we could detect and appropriately treat early coronary artery disease, we could perhaps prevent or delay women from experiencing an MI" (McSweeney, Lefler et al., 2005, p. 49).

More research needs to be done on women to further understand the differences that occur between genders prior to the presentation of the illness in order to prevent the complications that occur after the event (Eastwood & Doering, 2005). This study attempts to understand the experiences that women have prior to entering the health care system with ACS, specifically the prodromal and acute symptoms. Qualitative research in this area will lead to a richer understanding of this phenomenon and will help provide direction for further research.

Purpose of the Study

The purpose of this study was to explore and describe the experiences that women have prior to the diagnosis of ACS.

Research Question

What are the lived experiences of women prior to the diagnosis of ACS?

Definitions of Terms

Conceptual Definitions

Lived experience: "What the individual believes to be real or true in his or her life . . . it give meaning to each individual's perception of a particular phenomenon and is influenced by everything internal and external to the individual" (Speziale & Carpenter, 2007, p. 77).

Acute coronary syndrome: "Encompasses a spectrum of ischemic conditions, including unstable angina (UA), non-ST-segment elevation myocardial infarction

(NSTEMI), and STE-segment elevation myocardial infarction (STEMI)" (Sperdelozzi et al., 2007, p. 150).

Woman: An adult female of the human race (*Webster's Dictionary and Thesaurus*, 2002).

Operational Definitions

Lived experience: The symptoms prior to the onset of an acute coronary event from the experience of the woman having the symptoms.

Acute coronary syndrome: Diagnosis of acute coronary syndrome made by a physician with subsequent hospitalization and discharge within the past 12 months.

Woman: Any adult female over the age of 18 who has experienced an acute coronary event within the last 1 to 12 months without a prior history of CAD.

Assumptions

For the purposes of this study, the following assumptions were made:

1. Each female in the study was honest in her responses to her lived experiences prior to her presentation with ACS.
2. The lived experience of having an acute coronary event is unique to each individual.
3. Being a woman is a unique experience.
4. Data that emerge from a phenomenological study can add to the body of knowledge on this subject.
5. Individuals are able to read and write the English language.

Summary

Cardiovascular disease is a significant problem in the U.S. today. In the past, studies have generally excluded the female population. Since most research was done solely from the male perspective, most people consider CAD as a male disease. As a consequence, women are less likely to identify their own symptoms that are dangerous to their health, thereby delaying treatment (O'Donnell et al., 2004). Recent studies have shown that there are some significant differences between men and women regarding clinical presentation, signs and symptoms, diagnosis, and treatment of CAD (Chambers et al., 2007). This study was done to better understand the prodromal and acute symptoms that women have prior to ACS. To help promote the health of women, advanced practice NPs and other health care providers need to understand the unique symptoms that women have prior to an acute coronary event.

The purpose of this research was to study the lived experiences of women prior to the diagnosis of ACS. The aim was to attempt to identify warning signs and symptoms that are unique to women prior to an acute coronary event. A better understanding of this phenomenon could promote the health of women by improving the screening process and promoting earlier identification of cardiac problems in women. In this chapter, the background, problem statement, purpose of the study, research question, definitions and assumptions were presented.

CHAPTER II

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Introduction

The purpose of this study was to understand the lived experiences of women prior to experiencing an ACS. In this chapter, the theoretical framework and a review of literature are presented. The first section will describe Newman's (1999) theoretical framework and how it applies to this study. The literature review includes studies on both acute and prodromal symptoms of CAD.

Theoretical Framework

The theoretical framework for this study is based on Newman's (1999) nursing theory of health as expanding consciousness. The main concepts are health, consciousness and patterns.

Newman (1999) defines health as expanding consciousness, where both the diseased and non-diseased state are fused together to form the whole. Newman states that when a person becomes ill, it does not decrease his or her wholeness; it just makes the whole turn into a different form (Tomey & Alligood, 2002). Therefore, health is viewed as a life process where there is an interaction between self and the environment

Newman (1999) states that pattern recognition is similar to what most people consider insight or listening to their inner voice. It is what makes each person individual and unique (Tomey & Alligood, 2002). A pattern is part of the whole and gives meaning to life (Alligood & Tomey, 2006). Whatever events happen in people's lives are their underlying patterns. These patterns can include health or disease. Anything that

changes or disrupts these patterns in human beings, such as disease or catastrophic life events, is often what forces movement to a higher level of consciousness.

Newman (1999) describes consciousness in human beings as "the capacity of the human body system to interact with the environment" (p. 33). Human beings and the environment are one and they constantly must interact with each other (George, 1995). In Newman's (1999) theory, the human body system includes not only the things normally associated with consciousness like feeling and thinking, but also information found in the different body systems like the nervous system, the endocrine system, cardiac system and other body systems. "A person does not just possess consciousness but is consciousness" (Alligood & Tomey, 2006, p. 465). Newman also realized that life's realities are not the same for each person; rather they fall on some level of the spectrum of consciousness.

Newman (1999) describes the role of the nurse as that of caring for patients during their life experiences. If there is not caring in the relationship, then nursing is not present (George, 1995). The nursing role should focus on helping clients understand and recognize their own patterns (Tomey & Alligood, 2002). "The focus is not on the professional identifying what is wrong, or on planning and taking steps to correct. Rather, the professional enters into partnership with the client" (George, 1995, p. 399). Patients seek advice from the health care professional during times when they feel they can no longer help themselves.

Newman's theory can be applied directly to this research study. In this study the patient begins in her current level of consciousness. The term *pattern* refers to symptoms that women have prior to an acute coronary event, and these can be recognized by the patient or the provider. As the client begins to experience symptoms

that affect her quality of life such as fatigue, shortness of breath or chest pain, she enters into a period of disorganization. During this period of disorganization the client may begin to realize that her patterns are changing. At some point her life becomes so chaotic that she seeks health care.

When clients seek health care advice, they enter into a partnership with the NP and attempt to understand these new patterns and symptoms. As the nurse and client become more aware of the typical symptoms that women experience prior to an acute coronary event, they will be more likely to recognize these patterns earlier, thereby achieving a greater outcome and quality of life. As the client becomes more aware of these patterns, she will evolve into a higher level of consciousness.

The qualitative phenomenological method of inquiry in this study is appropriate for use with Newman's (1999) theory. Newman states that her theory can be used in research and in testing as long as the methodology used does not include a directional hypothesis. Her theory patterns should be "identified through interviews with research participants" (George, 1995, p. 402) with an attempt to describe and understand human experiences as they appear in their awareness. Specifically, Newman's theory applies to the hermeneutic phenomenological approach (Tomey & Alligood, 2002). This type of phenomenology helps to close the gap between what is known in our world and what is unfamiliar (Speziale & Carpenter, 2007).

Case Study

Mrs. Smith, a 67-year-old female, presents to the clinic with concerns about her recent symptoms of fatigue. She reports that for the last few months she has noticed a decrease in her normal activities. She is retired and lives at home with her husband. She has many grandchildren whom she watches several times a week. Mrs. Smith states that she has noticed that lately she has been unable to keep up with the grandchildren and tires easily when she is doing housework. She states that lately her husband pointed out to her that she just wasn't herself and since then she has started to notice the same things. She thought that this was just part of aging but now she is beginning to think that there may be something wrong with her health. Now she is concerned that there is something seriously wrong with her and she seeks guidance from her health care provider.

Using Newman's theory of health as expanding consciousness, Mrs. Smith's life is in disorganization. She has begun experiencing some patterns in her life that are abnormal and she needs assistance in dealing with them. She goes to her doctor's office and is evaluated by the NP, Ms. Ivy. Ms. Ivy uses Newman's theory to enter into a partnership with Mrs. Smith and attempts to understand her experiences. She does a thorough history and Mrs. Smith explains what has been happening in her life. The NP truly cares about Mrs. Smith and her health and is willing to assist her. Mrs. Smith reports that her symptoms have become unbearable and that it is affecting her quality of life. The NP will form a relationship that allows for mutual trust and will attempt to help Mrs. Smith with her new symptoms.

The NP must recognize that Mrs. Smith's illness has caused a period of disruption and disorganization that represents a time in her life where there is a potential

for expanding consciousness. The NP must enter into the relationship being aware of her own personal values and beliefs so that she can fully accept and share in the experience. Together the NP and Mrs. Smith gain insight into Mrs. Smith's symptoms. The NP uses her knowledge to recommend the appropriate tests. The NP is aware that women often experience atypical symptoms of CAD and attempts to help Mrs. Smith with pattern recognition. She praises Mrs. Smith for being aware of her body and noticing that there is a change. She tells Mrs. Smith that if it is CAD, it is better to find out before she has a heart attack. The NP and the patient will form a relationship and they will both be transformed to a higher level of consciousness throughout the process.

Literature Review

Introduction

The literature review for this study focused on the studies that were done on symptoms of CAD, specifically in women. A search of the literature was done using CINAHL and MEDLINE. Terms for the search included coronary artery disease, women, female and symptoms.

Although there has been research done on CAD for over 50 years, these studies have focused primarily on men. One of the first studies to include women was the Framingham Heart Study, which was started in 1949. This was a 50-year epidemiological study done on healthy individuals to compare the "prevalence, incidence, prognosis, and clinical manifestations of atherosclerotic cardiovascular disease and its predisposing risk factors in men and women" (Kannel, 2002, p. 27). It was the first study to identify that women exhibit with different symptoms than men when they present with CAD (Eastwood & Doering, 2005).

Prodromal Symptoms

Recent studies (Lockyer, 2004; McSweeney et al., 2001) have begun to investigate prodromal symptoms that some women experience prior to an MI. Prodromal symptoms can be defined as early warning signs or symptoms that occur irregularly prior to an acute coronary event and then disappear (McSweeney et al.). These symptoms can occur anywhere from a few weeks to 2 years prior to an acute coronary event. For instance, McSweeney et al. studied prodromal symptoms of 76 women by conducting qualitative interviews after a recent hospitalization for an MI. In this study, 68 of the women reported having some type of prodromal symptoms, and 60% of the participants had four or more symptoms. The most frequently reported prodromal symptoms were "fatigue (70%), shortness of breath (53%), pain in the shoulder blade/back (47%), and indigestion (43%)" (p. 33). The researchers stated that there has not been adequate documentation on the prodromal symptoms of women because most research has been done immediately after the MI while the patient is still hospitalized, and participants did not have time to recognize their earlier symptoms as contributing to their coronary event.

Lockyer (2004) did a qualitative study examining women's interpretations of their symptoms prior to the diagnosis of coronary heart disease. The researcher interviewed 29 women who were recently admitted to the hospital following an acute coronary event. The women reported having atypical symptoms prior to this event that they had either ignored or self-medicated. All of the women in the study had discussed their symptoms with a family member or friend prior to seeking a medical evaluation. The author concluded that women interpret their symptoms differently and that many of them fail to recognize their symptoms because they do not understand they are at risk for CAD.

Angina/Acute Symptoms

The majority of research has focused on the acute symptoms that occur prior to the onset of ACS. Acute symptoms are those symptoms that are experienced consistently and lead to a diagnosis of ACS (McSweeney et al., 2001). The typical symptom that most people recognize is chest pain. A qualitative study by McSweeney explored the acute symptoms that women experience prior to an acute myocardial infarction. The study revealed that women experience the typical symptoms associated with angina such as chest pain and shortness of breath, yet they are also likely to experience atypical symptoms as well (McSweeney, O'Sullivan et al., 2005). Atypical symptoms that are experienced by women prior to an acute coronary event include indigestion, shortness of breath, pain in the back under the shoulder blades, and pain in both arms (McSweeney, O'Sullivan et al.).

Another study by McSweeney et al. (2001) revealed that the most common acute symptom reported by women is chest pain, but they are more likely than men to experience upper back pain as well. In this study, 45% of the women experienced pain in the back between the shoulder blade as an acute symptom.

Due to the atypical nature of women's symptoms, they are more likely to have difficulty being diagnosed with CAD. A recent qualitative study of 40 women (McSweeney, Lefler et al., 2005) examined the diagnostic experiences of women prior to having an acute MI. The researchers concluded that the women in this study initially denied their symptoms, somewhat delaying evaluation. When they did seek treatment, they reported difficulty being diagnosed, they were not taken seriously, or they were treated for indigestion or depression. Though identification of symptoms was not the

main intent of this study, it should be noted that 37 of the women experienced at least one prodromal symptom.

Several studies also have shown that women are more likely than men to experience chest pain that is not associated with CAD. Sanfilippo, Abdollah, Knott, Link and Hopman (2005) conducted a qualitative study on 158 women who presented in an emergency room, primary physician or cardiology office with undefined chest pain and no history of CAD. The researchers followed the women for approximately 2 years to determine if their presenting symptom of chest pain correlated to a diagnosis of CAD. It was determined that only 30 (19%) of the women had CAD and the other 128 had noncardiac chest pain. The Framingham study also supported the theory that women are more likely than men to experience angina that is not associated with CAD (Kannel, 2002).

Vodopiutz, Poller, Schneider, Lalouschek, Menz and Stollberger (2002) conducted a quantitative and qualitative study to assess whether there were differences between genders in the description of chest pain and the cause of chest pain. Subjects included 92 patients hospitalized due to chest pain. They were interviewed in the hospital and again 3 months later. The participants completed a questionnaire and were interviewed with questions related to their symptoms. The researchers concluded that women were more likely than men to have chest pain that was not associated with CAD, yet there were no significant differences between the genders in regard to the location and quality of chest pain symptoms. The fact that women often have chest pain that is not associated with CAD has further dispelled the myth that CAD in women is not cardiac.

Another study done by Methot, Hamelin, Bogaty, Arsenault, Plante and Poirier (2004) examined whether there was a difference in the clinical presentation of CAD between premenopausal and postmenopausal women. The participants were selected in hospitals after the diagnosis of ACS was made by a physician. Within 72 hours of hospital admission, the participants were given a questionnaire containing 27 typical and atypical ~~known~~ symptoms. The researchers concluded that both premenopausal and postmenopausal women experienced the typical symptoms, specifically chest pain, prior to the presentation of ACS. But the results also showed that 50% of the postmenopausal women also experienced atypical symptoms such as fatigue, nausea, weakness, arm pain, diaphoresis and Dyspnea.

General Studies on CAD

Since CAD has been primarily known as a disease only for men, Wegmann et al. (2003) conducted a quantitative study to determine if the gender of the physician would affect the diagnosis of CAD based on patient history. The study involved 144 participants: 47 females and 97 males. The patients were hospitalized for chest pain and were interviewed by both a male and female cardiologist to determine if physicians of the same gender would more accurately diagnose chest pain in the same-sex patient. After the interview, patients were evaluated either by stress testing or angiography to determine if they had CAD. The authors concluded that female cardiologists were not more accurate than their male colleagues in diagnosing CAD in women.

Buckley, McKinley, Gallagher, Dracup, Moser and Aitken (2007) examined whether or not education and counseling on knowledge, attitudes and beliefs about CAD affected responses to acute myocardial symptoms. Two hundred participants (137 males and 65 females) were recruited using a randomized controlled trial comparing the

usual care to an additional education and counseling intervention. All participants in the intervention group received an individual face-to-face educational session. The participants were measured at baseline, 3 and 12 months post-intervention. The study revealed that the intervention group retained more knowledge up to 12 months after the intervention. The results indicated that increased knowledge regarding the symptoms of CAD is needed to decrease the delay before seeking health care.

Summary

Research has identified that there is still a lack of knowledge about symptoms of CAD in women. Men and women experience different symptoms prior to the presentation of ACS. In the past, symptom recognition was based on male symptoms, yet women are more likely to “describe atypical and nonchest pain symptoms at the presentation of ACS” (Methot et al., 2004, p. 695). Women also have poorer outcomes than men after the presentation of ACS. This is due to the fact that their symptoms are atypical and are often not associated with CAD, thereby increasing the time between symptom onset and treatment. This delay in treatment may be caused by several factors: (a) Women have different symptoms than men and may not realize their symptoms are related to CAD; (b) women are less likely to recognize that heart disease affects women; and (c) women are less likely to consider themselves at risk for heart disease and may not perceive their symptoms are serious (Eastwood & Doering, 2005).

In the past, health care providers focused on chest pain as the primary indicator of CAD, yet women often present with other symptoms. Health care providers need to fully understand and be aware of the symptoms, both prodromal and acute, that women experience prior to an ACS. If women are expected to seek health care for vague

symptoms such as fatigue and weakness, then health care providers need to be aware and diagnose their symptoms appropriately (McSweeney et al., 2001).

It is essential that health care providers understand patients' experiences prior to the presentation of an acute coronary event to improve CAD prevention and outcomes. There have been two qualitative studies conducted regarding women's symptoms prior to ACS. A limitation of this research is due to the small sample size in each of these studies; therefore, further qualitative research is needed to increase the data base of knowledge. Qualitative methods that use less structured questions can allow patients to give a more detailed explanation of symptoms, rather than quantitative methods that only ask patients to indicate their preference from a limited array of questions. Also, previous studies that have examined prodromal symptoms have always interviewed participants with only 2 to 5 days after their acute coronary event. This may not have given the participant enough time to fully recognize their earlier symptoms. Therefore, further research should be undertaken after the patient has had time to recover from the acute event. In this chapter, the theoretical framework and a review of the literature were presented.

CHAPTER III

METHODOLOGY

Introduction

The purpose of this study was to explore and describe the experiences that women have prior to the diagnosis of ACS. In this chapter the study design, sample, setting, data collection procedure, data analysis and limitations of the study are presented.

Research Design

A qualitative phenomenological approach was most suitable for exploring the research question: What is the lived experience of women prior to the diagnosis of ACS? Phenomenology is used when the researcher wants to get a better understanding of a person's life experiences (Polit & Beck, 2004). Phenomenology is based on two main tenets: that each person has his/her own beliefs about a particular phenomenon based on lived experience, and that "human existence is meaningful and interesting because of people's consciousness of that existence, p. 253). The phenomenological approach attempts to understand what the core characteristics of a particular phenomenon are and helps readers to understand what that experience means to each person.

Population, Sample and Setting

The accessible population consisted of a convenience sample of six women who received outpatient care at a northeastern Wisconsin cardiology clinic and who agreed to participate in the study. The target population was women over the age of 18 who lived in the northeastern Wisconsin area. The inclusion criteria for the study were: (a)

diagnosis of ACS in the last 1 to 12 months, (b) adult female over the age of 18, (b) ability to speak and converse in English, (d) no history of CAD, and (e) agreeing to participate in this study and to have the interview audiotaped.

Data Collection Instruments

The instrument for the study was designed by the researcher and consisted of an interview. The interview was unstructured and consisted of open-ended questions such as:

1. Tell me about your experience when you had your heart attack.
2. How was your life before you had your heart attack?
3. Did you have any new or unusual symptoms prior to your heart attack that you believe were associated with your heart attack?
4. What symptoms did you experience during your heart attack and how severe were these symptoms?
5. Has your life changed since this experience?

The participants were encouraged to discuss their life experiences prior to their diagnosis. The researcher also developed a questionnaire (Appendix A) that was given to each participant. The interviews were conducted either in the home of the participant or in the provider's office prior to an appointment. The participants chose the locations for the interviews, which lasted approximately 1 hour and were audiotaped.

Prior to data collection, the researcher used bracketing to control researcher bias. Bracketing is a thought process used by the researcher to keep out one's personal beliefs and judgments about the phenomenon under study (Speziale & Carpenter, 2007). This researcher has spent the last 10 years working with cardiac patients in both

the acute and outpatient setting. She was aware of her own feelings throughout the interview and data analysis process so that her personal feelings did not affect the results of the study. The interviewer was the instrument in this study and attempted to help the participants describe their lived experiences without taking over the conversation. The researcher and the participant shared equally in the process. Prior to the interview process, the researcher used reflexivity to increase the quality of the results. This was done by attempting to identify all biases and influences the researcher could bring into the interview. "As researchers, it is our responsibility to reflect on our influence, critically analyze it, and use it to enhance our work, always being aware of the fact that no research is without its subjective aspects" (p. 36).

Reliability and Validity

In qualitative research, trustworthiness is used to establish reliability and validity of a study (Polit & Beck, 2004). According to Polit and Beck, trustworthiness is made up of four components: (a) dependability, (b) confirmability, (c) credibility, and (d) transferability. To increase the trustworthiness of the study, the following steps were taken:

1. One qualitative interviewer conducted the study.
2. All audiotaped interviews were transcribed verbatim and were checked for accuracy.
3. The researcher maintained an audit trail throughout the entire process.

4. Participants reviewed the findings to determine if the main themes provided an accurate picture of the phenomenon under study (member checking) (Speziale & Carpenter, 2007).

Newman's (1999) theory also states that the researcher should share his/her perceptions of a person's patterns that are obtained during research with the participant. Newman believes that this gives new meaning to the person and can stimulate new insight into the participant's life and the life of the researcher.

Data Collection Procedures

Data were collected through audiotaped semi-structured interviews. Participants were obtained with the assistance of local NPs and physicians from a northeastern Wisconsin clinic. Participants were given written information about the study and were contacted by phone if they stated they were interested in participating in the study. An explanation of the study and the requirements of the study were explained to the participants at that time. Participants were told that the interview process would take approximately 1 hour. They were also informed of their rights and were informed of any risks associated with the study. They were assured that the researcher would keep the study information confidential.

Participants decided on the time and place for the interviews—at the clinic prior to or after a scheduled appointment, or at the participant's home. Prior to the interview, participants were asked to sign a consent form (Appendix B) stating that they agreed to participate in the study and for the interview to be audiotaped. A demographic questionnaire was completed prior to the start of the interview. Each participant was

asked the same open-ended questions during the interview process. The interviews were audiotaped and transcribed verbatim.

Protection of Human Participants

Permission for this study was obtained from the University of Wisconsin Oshkosh Institutional Review Board (IRB) (Appendix C). Permission to solicit volunteers was obtained from the Bellin Institutional Review Board (Appendix D). After the completion of the study all audiotapes were destroyed. Participants were given the opportunity to obtain a copy of the results of the study.

Pilot Study

A pilot study was conducted prior to the initiation of the actual study. The researcher conducted one interview in which the demographic questionnaire and the interview guide were utilized. This aided the researcher in gaining experience with the use of the instruments and allowed the researcher to determine if the participants understood the procedures. The pilot study also assisted the researcher with data analysis.

Data Analysis Procedures

Descriptive statistics were obtained through a demographic profile of the study participants. The qualitative data obtained were analyzed using the method described in Speziale and Carpenter (2007): (a) intuiting, (b) analyzing, and (c) describing. The researcher became immersed in the data and attempted to maintain each individual's perspective. Intuiting involves becoming completely immersed in the phenomenon of

study as described by the participants. Analyzing "involves identifying the essence of the phenomenon under investigation based on data obtained and how the data are presented" (pp. 85-86). One of the most important steps is describing, which involves written and verbal descriptions of the phenomenon that is being studied. The researcher placed the data into groups or categories. This was done after sufficient information was obtained and is a circular process wherein all three steps occurred at the same time during data collection.

Interviews were transcribed verbatim. The researcher read the transcripts several times until significant themes were extracted from the data. The researcher wrote the themes on index cards to help keep them in order for later use. The final step of the process consisted of capturing the important themes and statements made during the interviews so that the phenomenon could be described. The researcher needed to understand how the participants' statements and central themes of the study blended together (Speziale & Carpenter, 2007).

Limitations

1. The use of a convenience sample.
2. Only English speaking participants.
3. Small sample size that detracted from the generalizability of the study.

4. The inexperience of the investigator.

Summary

Study participants consisted of a convenience sample of six female patients from a northeastern Wisconsin cardiology clinic who were diagnosed with an acute coronary event within the last year. During the interview the participants were audiotaped while they were asked open-ended questions to help better understand this phenomenon.

CHAPTER IV

RESULTS AND DISCUSSION

Introduction

The purpose of this study was to explore and describe the lived experiences of women prior to an acute coronary event. In this chapter, the results of the study are presented, followed by a discussion of the lived experiences of these women prior to their acute coronary events.

Demographic Data

All of the participants in this study were White females and were patients of a northeastern Wisconsin cardiology clinic. All of the participants were high school graduates who received some type of technical training after high school. The participants ranged in age from 53 to 78, with an average age of 68. Four of the participants were married and two were divorced. Five of the six participants were retired from their original occupations. Two of the six participants smoked cigarettes prior to their coronary event. Only two of the six participants drank alcohol at all, and they consumed one to five alcoholic beverages per week.

The Interview Process

Each face-to-face interview was conducted in a location selected by the participant and lasted approximately 30 minutes. All participants were willing to discuss their experience, and to be audiotaped. After the participants were given information

about the study, they signed an informed consent sheet and completed a demographic questionnaire just prior to the interview. All participants spoke freely about their experience that occurred prior to their recent cardiovascular event. They discussed their symptoms, both prodromal and acute, and the events prior to and during their acute cardiac episode.

Results and Discussion

A nonstructured interview process was used for data collection. Participants reported their thoughts and experiences that occurred prior to and during their cardiac event. The interviews were audiotaped, transcribed verbatim and analyzed using the steps outlined in Speziale and Carpenter (2007): (a) intuiting, (b) analyzing, and (c) describing. Data were broken down into two time periods according to the time frame of their symptoms—either the prodromal or acute time period. In the prodromal time period two main themes emerged: (a) denial and (b) looking for answers. In the acute time period three main themes emerged: (a) awareness, (b) seeking medical help, and (c) recognition.

Prodromal Time Period

During the prodromal time period, five of the six participants described experiences that they had in the weeks to months prior to their acute coronary event. The prodromal time period is the time period that describes the symptoms that occur periodically and change in intensity from the time they are first recognized until their acute event (McSweeney, Lefler et al., 2005). The women in this study were purposively interviewed at least 4 weeks after their coronary event so they could reflect and recognize which symptoms they had experienced and determine if the symptoms had

since been relieved. In the prodromal period, the most common symptom was shortness of breath described by three of the six participants. Other prodromal symptoms included chest pain, fatigue and a burning in the throat. Only two these women actually sought advice from a health care provider and neither of them had their symptoms diagnosed as heart related. In this period two main themes emerged: (a) denial and (b) looking for answers.

Denial

In this theme, five of the six participants described that signs and symptoms first appeared until the time of their acute event. The sixth participant stated she never had prodromal symptoms, but offered, "I smoked cigarettes and was diabetic and I didn't really think a lot about my health." The other five women did recognize that they had some abnormal symptoms, but they denied that these symptoms signified anything serious and did not feel that they were heart related. They also did not feel they were at risk or susceptible to having heart disease. One participant recalled symptoms that she had several months prior to her acute event saying, "In July, I was having the same thing—chest pain and my arm hurt, but I just blew it off. So I could have been having a heart attack then, too, but I thought nahh, it will go away."

Many of the women attributed their symptoms to other causes. One described her experience after a swimming exercise class at the YMCA. "I remember walking in one day thinking 'My God they must have put a lot of chlorine in here because I can't breathe'." A second participant blamed her symptoms on the weather. She stated:

One day when I walked back [to my house] . . . I thought "Oh my God; I am never going to make it." And by the time I got back here I was so

out of breath, but it was a warm day and I thought it was the heat. I just kind of brushed it off.

Another woman stated her only prodromal symptom was fatigue and she did not relate this to heart disease. She stated "When I came home in the afternoon I told my husband I am just wiped out, I have to lay down for a half an hour . . . and I don't take naps."

Unanswered Questions

In this theme, participants attempted to identify a cause for their prodromal symptoms. Only two of the six female participants recognized that their symptoms were severe enough to require medical attention. Of these two women who sought medical help, neither of them had their symptoms diagnosed as cardiac related. One of the participants went to her family doctor on three separate occasions due to shortness of breath and throat pain. She described her experience:

I went to the doctor and said, "It hurts (pointing to her throat) and I'm having a hard time breathing." And he said to me, "You're a mouth breather." And I went home and I thought, "I'm not a mouth breather" so I went back again and I complained again. I said, "I have a hard time breathing." He said, "Well maybe you have asthma now." So then he put me on medicine for asthma.

This woman was referred to two different specialists—one for asthma and one for allergies and was given several different medications. None of them relieved her symptoms. She reported having symptoms on a regular basis such as "I hurt, my throat hurt, I couldn't breathe and I was just like really, really tired." The other participant described her symptoms as "that little ping in my chest I would get occasionally. I had it checked out a couple of time, but nothing showed up." This participant actually went to her doctor and the emergency room on two separate occasions, but her symptoms were

not recognized as heart related. These health care visits only made the women doubt their prodromal symptoms even more, and they became frustrated because the treatments did not help alleviate their symptoms.

In summary, the most common symptom that women experienced during the prodromal time period was shortness of breath. Only one of the participants experienced actual chest pain during this period. Participants reported feelings of denial and often minimized their symptoms blamed their symptoms on other causes. The women also expressed frustration when they attempted to seek medical advice for their symptoms. Of the two women that did seek health care; neither had their symptoms identified as heart related.

Acute Time Period

During the acute time period, participants described experiences that they had immediately preceding their acute coronary event. The acute time period is when the symptoms occur continuously until a diagnosis of acute coronary syndrome is made (McSweeney, Lefler et al., 2005). All six women stated they experienced severe symptoms during this acute phase, and that the symptoms occurred with a sudden onset. One woman stated, "All of a sudden I was dizzy, I was lightheaded, I had chest pain, my arm started hurting me. I said to my husband 'something is wrong with me'." All six women also described their main symptom during this phase as shortness of breath. One said, "I just wasn't getting any air or a breathless feeling." Two of the six women stated they had actual pain in their chest during their acute event, but only described it as typical chest pain. The other woman stated she had a "ping" in her chest. The other four women actually denied having pain and one participant stated, "I only had pressure the entire time, I never got any pain." Other symptoms experienced during the acute time

period included: arm pain, arm numbness, chest heaviness, pain between the shoulder blades, dizziness, diaphoresis, nausea, and headache. The three main themes that emerged during this time period were: (a) awareness, (b) seeking medical advice, and (c) recognition.

Awareness

In this theme, the women described the symptoms when they first recognized that they were significant. All of the women stated that their acute symptoms became so intense and severe that they overcame their denial and convinced themselves that something was not right. One woman stated, "It got to the point where I would be sitting in my chair and if I got up to walk 5 feet I got such chest pains I couldn't stand it." Another woman stated, "I went out into the living room by my husband and I said 'something is not right. I have a real heavy spot in the middle of my chest and it's not getting better'." A third woman described how she made her decision to go to the hospital. "I wasn't sure what the pain was. I kept thinking maybe I'm not feeling it, but all of a sudden it was. It wasn't like my arm went numb. It just hurt real bad."

All of the women did eventually seek medical help for their symptoms, even though they were not completely sure what their symptoms meant. Once the women became aware their symptoms were real, they immediately recognized the need to seek medical advice. One woman stated, "I just couldn't breathe. I said to my husband, 'honey I think you better take me to the hospital'."

Seeking Medical Advice

In this theme, the women decided when and how to seek care during the acute period. When their symptoms became so severe that they decided to seek medical advice, they all turned to trusted family and friends to help in the process. Some of the

women sought medical attention right away, while others delayed their treatment for several hours. One participant had pain all day, but she was babysitting so she decided to wait until her family returned home to seek treatment. "I sat there all day until about 6x o'clock at night. My son came home and I said 'uh, can I borrow your car? I think I need to go to the hospital. Something ain't right'."

Another woman went to her local health care provider's office with her symptoms. She was told she was having a heart attack and that the ambulance was coming to pick her up, but she was more concerned about her cats' well-being at home.

The doctor showed up....and they wanted me to go to the hospital in an ambulance. I said "No, I'm not going. I have three kitties at home. Let me go home and tend to them and I will meet you there.

Another participant delayed seeking medical treatment because she was concerned about her invalid husband by himself at home.

I had my husband here and I didn't have anybody to stay with him and I didn't really feel that I should take myself to the doctor so I just kind of let it go until my daughter got here and then we had supper.

All of the women entered the medical arena in different ways, either by calling emergency services, contacting their personal physician, or by driving to the hospital in a personal automobile. Only one of the six participants called 911 for assistance, and one drove herself to the hospital.

Recognition

In this theme, when the women did seek medical advice during the acute period, they felt the medical personnel identified their problems appropriately and rapidly. They all described their experiences as positive and stated they felt they were given prompt

and appropriate medical care. One woman described her experience. "Oh, I just walked in and I said 'I don't feel well, I can't breathe'. And when I went like this [holding her throat] they knew. They all started running." Another woman who was brought to the hospital by an ambulance stated she was in the emergency room for only 10 minutes and the doctor told her she had a heart attack. Another woman was brought to the emergency room by her husband and stated, "My husband told them a possible heart attack, so they rushed me right into the room, on the table; it was just like a drove of birds working."

Summary

This chapter outlined the main themes that were identified from interviews with six participants after a recent coronary event. Participants spoke of their unique experiences and symptoms both during the prodromal and acute time period prior to their acute coronary event. Two major themes emerged during the prodromal period: (a) denial and (b) unanswered questions. Three major themes emerged during the acute time period: (a) awareness, (b) seeking medical help, and (c) recognition. The results of this study were consistent with findings noted from previous studies (McSweeney et al., 2001; McSweeney, O'Sullivan et al., 2005) except for the subtheme of recognition during the acute time period. In this study women reported that during the acute time period clinicians recognized their symptoms and they reported feelings of being "treated appropriately". Other studies have shown that women's symptoms are often overlooked or misdiagnosed (McSweeney et al., 2001; McSweeney, O'Sullivan, et al.).

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

The purpose of this study was to describe the lived experiences of women prior to an acute coronary event. In this chapter a summary of the women's experiences is provided, followed by conclusions and recommendations for nursing practice and research.

Summary

Coronary artery disease is the leading cause of death in women today, yet there is still a misconception that women are not at risk for having heart disease (Miracle, 2006). Coronary artery disease is a major cause of hospitalization and disability and one of the leading costs affecting our health care system today (McSweeney, Lefler et al., 2005). There is also a disparity between the genders in regard to outcomes after having an acute coronary event. Women are twice more likely to die after experiencing a heart attack than men. This is thought to be due to three main reasons. The first is that women do not feel they are risk for coronary disease (Miracle, 2006). The second is that women experience different symptoms than men prior to an acute coronary event. The third reason is that when women do seek treatment from the health care system, they are often misdiagnosed due to the atypical nature of their symptoms (McSweeney, Lefler et al.).

There has been on a paucity of research done on women and their symptoms prior to having an acute coronary event (Efre, 2004). Most of the research that was

completed focused on the male population, and then the results were applied to the female gender. Qualitative research can augment the knowledge obtained from quantitative studies and increase the understanding of women's experiences and symptoms prior to an acute coronary event.

The purpose of this study was to explore and describe the experiences of women prior to the diagnosis of acute coronary syndrome. A nonexperimental design using a qualitative phenomenological approach was used to explore the meaning of this experience as perceived by the individual.

Newman's theory of health as expanding consciousness (1999) served as the theoretical framework for the study. Her theory suggests that health is where both the diseased and nondiseased states are fused together to form the whole. It states that pattern recognition, each individual's life events, health or disease, is what makes each individual unique. In this study, patterns are directly related to the symptoms that the women experience prior to their acute coronary event. If these patterns are interrupted during life due to disease, people are forced to change their patterns and therefore move to a higher or different level of consciousness. This theory directly supports the findings of this research. If these women had been able to identify their patterns or symptoms sooner, it would have helped them to reach a health care provider earlier. Educating women about heart disease, their risks and the typical symptoms that women experience can help them identify these patterns earlier, thereby decreasing mortality and potential morbidity.

A purposive sample of six women who experienced an acute coronary event participated in this study. Each participant was asked the same five open-ended questions pertaining to their symptoms and their experience prior to their coronary event.

Responses were analyzed using Speziale and Carpenter's (2007) methodology for data analysis. Five global themes emerged and were divided into two main time periods: (a) prodromal and (b) acute. The two themes that emerged during the prodromal time period were (a) denial and (b) unanswered questions. The three themes that emerged during the acute time period were: (a) awareness, (b) seeking medical help, and (c) recognition.

In this study the most common prodromal symptom was shortness of breath, which is consistent with findings from other studies (Lockyer, 2004; MacInnes, 2006; McSweeney et al., 2001; McSweeney, Lefler et al., 2005). Other prodromal symptoms included fatigue and a burning in the throat. Only two of the women experienced chest pain during the prodromal period. This too is consistent with other studies, which show that women are more likely to experience atypical angina symptoms (McSweeney et al., 2001). Only one of the participants did not experience prodromal symptoms, but she also had diabetes mellitus, which could be a contributing factor.

The first theme, denial, described the experiences of the participants during the prodromal period from the time their signs and symptoms first appeared. Five of the six participants did express denial of symptoms during this time period. The women stated that they experienced symptoms but failed to recognize their significance or blamed their symptoms on other things, such as the weather. This is consistent with other another study that indicated that women are often uncertain about their symptoms and tend to blame the symptoms on other bodily functions (McSweeney, Lefler et al., 2005; McSweeney, O'Sullivan et al., 2005). "This misattribution of symptoms is identified in past research as a major contributor to delay in seeking medical treatment and poorer outcomes" (McSweeney, Lefler et al., p. 55).

Without exception, all of the women did not perceive themselves at risk for cardiac events, which is supported with other study findings (McSweeney, Lefler et al., 2005; McSweeney, O'Sullivan et al., 2005; Miracle, 2006). It has been argued by other authors that this is due to a "collective consciousness in society as seeing women as low risk" (MacInnes, 2006, p. 286). This denial did delay the women from seeking appropriate medical care. The duration of this time period varied from 6 months to a few weeks, depending on the severity and frequency of the prodromal symptoms.

The second theme, unanswered questions, described experiences that women had during the prodromal period, as they looked to medical personnel for assistance with their symptoms. During the prodromal period the two women who did seek treatment expressed some frustration with the difficulty they encountered being diagnosed. They reported feeling misunderstood or that their doctors did not take their symptoms seriously. This is supportive of others studies that show that clinicians had difficulty recognizing and diagnosing women's prodromal symptoms and often treated them for other ailments (McSweeney, Lefler et al., 2005; McSweeney, O'Sullivan et al., 2005). This could be due to the atypical nature of the symptoms that the women presented to their health care provider. Also, women in this study as well as in other studies (McSweeney, Lefler et al., 2005; McSweeney, O'Sullivan et al., 2005) had difficulty in assessing their own prodromal symptoms, often attributing their symptoms to other causes. This lack of awareness further delayed medical care leading to poorer outcomes. In comparison, during the acute time period women felt that their symptoms were recognized quickly and they received adequate health care from all of their providers.

In this study, during the acute time period, the most common symptom experienced by these women was shortness of breath. This too is consistent with findings from another study (McSweeney et al., 2001). Other symptoms experienced during the acute phase were arm pain and numbness, chest heaviness, pain between the shoulder blades, dizziness and diaphoresis. All of these symptoms have also been reported in other literature, though literature states (Miller, 2002) that chest pain is the most often experienced symptom during the acute phase and this study does not support that data

In the third theme, awareness, the women's experiences were described during the acute time frame. The women in this study initially denied their symptoms but eventually did seek medical advice when their symptoms became more persistent and severe. This is consistent with other studies that indicate denial is often an initial reaction to symptoms (McSweeney, Lefler et al., 2005; McSweeney, O'Sullivan et al., 2005). This was apparent during both the prodromal and acute time period, but denial was overcome during the acute time period, once the symptoms became severe.

The fourth theme, seeking medical help, describes the experiences of the women as they decided how and when to seek medical help. Some of the women sought medical help right away, while others delayed treatment until their symptoms were severe. The fifth theme, recognition, describes the experiences the women had during the acute time period when they sought medical help for their symptoms. During the acute time period, all of the women in this study reported that they were taken seriously when they sought medical help. This is inconsistent with past studies that have reported that women felt that they were not taken seriously by health care professional in the past (McSweeney et al., 2001; McSweeney, O'Sullivan et al., 2005). This could indicate that

the health care providers are now more aware of the risks of coronary disease in women.

In summary, it is impossible to generalize the results of this small scale study, yet it is clear that there is room for improvement regarding the care of women as it relates to coronary artery disease. The need for early recognition, diagnosis and prompt medical treatment are necessary to improve the mortality and morbidity rates of women after an acute coronary event.

Conclusions

Conclusions from the results of this research study are:

1. The lived experience of women prior to an acute coronary event is a unique experience.
2. Women experience a variety of prodromal symptoms prior to their acute coronary event and these symptoms are often not perceived as important or medically significant.
3. In general, women perceived themselves as lacking susceptibility to cardiac disease.
4. Women in this study typically denied initial symptoms, but later sought medical assistance when the symptoms became severe.
5. The most common symptom experienced by women during both the prodromal and acute time period was shortness of breath.
6. Women were often misdiagnosed during the prodromal time period, but during the acute time period their symptoms were addressed appropriately and efficiently.

Implications for Nursing Practice

This study accentuates a number of implications for nursing practice. Women need to have increased knowledge and a better understanding as it relates to their risk for coronary artery disease. This can be accomplished through health promotion strategies at both local and national levels. During both the prodromal and acute time period women may experience a wide range of symptoms that are considered outside the normal or typical symptoms linked to heart disease. Health care professionals and the general public need to redefine the symptoms of cardiac disease to include the common symptoms experienced by women, both during the prodromal and acute time period. Media campaigns and other published information, such as *Go Red for Women* promoted by the AHA, can be useful to increase women's awareness and recognition of the wide range of possible symptoms that they can experience. Health care providers at all levels need to be better educated on the experiences and symptoms of women, so that when women do seek help from their health care provider, their symptoms can be quickly diagnosed and appropriate care can be obtained.

Nurse practitioners can provide counseling, support, and education for women who are experiencing symptoms or for those at risk for having coronary disease. High-risk women need to be educated on the disease process, informed about the possible symptoms, and encouraged to seek assistance from a health care provider if they experience any typical or atypical symptoms. Also, the importance of seeking immediate medical care with symptoms should be stressed with all patients.

Implications for Research

Implications for research include:

1. Additional qualitative research is needed to explore and understand the symptoms that women experience prior to an acute coronary event.
2. Future studies should include participants from other cultural and ethnic groups. .
3. Research should be conducted to develop an evidence-based list of women's common and predictive symptoms of CAD. These symptoms should be included into educational material to assist both women and health care providers in recognizing the early signs of women's CAD.

Chapter Summary

In this chapter the study was summarized and conclusions were provided. In addition, implications were presented for nursing practice and research. It is impossible to generalize the results of this small qualitative study to all women; however, it is clear that there are areas to improve the quality of health care that is provided to women with CAD. Careful screening of all women who present with risk factors and paying careful attention when assessing symptoms should be done to help improve the identification of heart disease in women.

APPENDIX A
Demographic Questionnaire

Background Information

This questionnaire will provide us with important information about your background.

Please read each question carefully. Fill in the blank or circle the appropriate answer.

Please try to answer every question that applies to you correctly. If none of the answers seems exactly right, please choose the most appropriate response.

1. What is your age? _____

2. What is your race/ethnicity?

- _____ Caucasian/non-Hispanic
- _____ African American
- _____ Hispanic
- _____ Asian American
- _____ American Indian
- _____ Other

3. What is that highest grade of school that you completed?

- _____ Grade school or less
- _____ Some high school
- _____ Graduated from high school
- _____ Technical training after high school, not college
- _____ Some college
- _____ Graduated from college
- _____ Post-graduate work

4. Are you:

- _____ Married
- _____ Widowed
- _____ Separated
- _____ Divorced
- _____ Never married

5. What is your occupation? _____

6. Are you retired? _____

7. What is your household income?

- _____ Less than 20,000 per year
- _____ 20,000 to 35,000 per year
- _____ 36,000 to 50,000 per year
- _____ More than 50,000 per year

8. Did you see a physician in the six months prior to your heart attack? If so, why?

9. Circle the symptoms that you experienced prior to your heart attack?

Chest pain	Shortness of breath	fatigue
Arm pain	back pain	jaw pain
Shoulder pain	other	_____

10. Were you physically active prior to your heart attack? If so, what activities did you do?

11. Are you physically active now? What activities do you do?

12. Do you smoke cigarettes? If so, how many? If no did you smoke prior to your diagnosis?

13. How much alcohol did you consume prior to your heart attack?

None	_____
1-2 drinks per week	_____
3-5 drinks per week	_____
6-8 drinks per week	_____
9 drinks or more per week	_____

14. How much alcohol do you consume now?

None	_____
1-2 drinks per week	_____
3-5 drinks per week	_____
6-8 drinks per week	_____
9 drinks or more per week	_____

APPENDIX B
Information and Informed Consent

Hello, I am a graduate student in nursing at the University of Wisconsin Oshkosh. I am conducting a study about the experience that women have prior to the diagnosis of a heart attack, also called a myocardial infarction. I would appreciate your participation in this study. With the results of this study, I hope to increase the clinical knowledge base for practitioners as it relates to heart disease and women. As a participant in this study, you will be asked to complete a demographic questionnaire and participate in an interview that will be audio-taped. The interview can take place in your home or in the office prior to or after an appointment, or at an agreed upon place of your choice. After the interview, the audiotape will be transcribed by a transcriptionist. I will place a follow-up call to you within 48 hours to discuss any additional concerns or issues that you will be having. If you should experience emotional distress after the interview process you can call the crisis intervention hotline 920-436-8888. Although I could study this question by interviewing the health care practitioners, I feel that speaking with you in person is the best way to understand your experience and concerns.

All data gathered will be confidential. I will not put any identifying information on your paperwork, nor will I record any identifying information during the interview. The total amount of time to complete the interview and paperwork should take about one hour. No information will be released to your doctor or to anyone else in a way that could identify you. The demographic questionnaires and audiotapes will be kept in a locked file, and only the researcher will have access to the questionnaires. If the results of this research are reported in scientific journals or meetings, only group information will be used.

There are two possible risks that could affect you during participation in this study. One is the time commitment of participating in the interview and filling out the questionnaire and the other is possible emotional distress that you might experience during the interview. Participation in this study may not benefit you directly. Your participation in this study is voluntary. If you do not wish to participate, this will in no way affect your care as a patient. If you want to withdraw from this study at any time, you may do so without penalty. If you decide to stop participating in the study, all information that you have provided will be destroyed.

Once the study is completed, I would be glad to give the results to you. If you wish to have a copy of the results please let me know during the time of the interview and I will mail the results to you. In the meantime, if you have any questions please contact me personally:

Tracey Zollar, BSN, RN 920-639-1345
Or write: Dr. Vicki Moss
 College of Nursing, UW Oshkosh
 800 Algoma Blvd, Oshkosh, WI 54901

If you have any concerns about your treatment during your participation in the study please call or write:

Chair, Institutional Review Board for Protection of Human Participants
c/o Grants Office at UW Oshkosh
Oshkosh, WI 54901 (920) 424-1415

Or contact:

Dr. Jean Riquelme, Human Subjects Administrator
725 S. Webster Avenue
Green Bay, WI 54301 (920) 433-3456
Fax: (920) 433-3460 or email jmriqu@bellin.org

Although the chairperson may ask for your name, all complaints are kept in confidence. I have received an explanation of the study and agree to participate. I understand that my participation in this study is strictly voluntary.

Name _____

Date _____

I consent to be audio-taped.

Name _____

Date _____

APPENDIX C

UW Oshkosh IRB Approval Letter



November 16, 2007

Ms. Tracey Zollar
2020 Meadowsweet Dr.
Green Bay, WI 54313

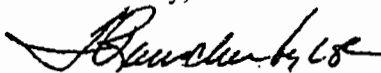
Dear Ms. Zollar:

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: What is the Lived Experience of Women Prior to the Diagnosis of Acute Coronary Syndrome?

Your research has been categorized as NON-EXEMPT, which means it is subject to compliance with federal regulations and University policy regarding the use of human participants as described in the IRB application material. Your protocol is approved for a period of 12 months from the date of this letter. A new application must be submitted to continue this research beyond the period of approval. In addition, you must retain all records relating to this research for at least three years after the project's completion. ..

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: Vicki Moss
1253

INSTITUTIONAL REVIEW BOARD
UNIVERSITY OF WISCONSIN OSHKOSH • 800 ALGOMA BLVD • OSHKOSH WI 54901
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APPENDIX D

Bellin Institutional Review Board Approval Letter

bellinhealth

Healthcare Partner of



The Green Bay Packers

December 14, 2007

Ms. Tracey Zollar
2020 Meadowsweet Dr.
Green Bay, WI 54313

Dear Ms. Zollar:

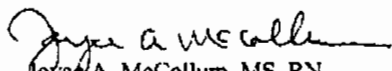
The Bellin Health System Corporate Institutional Review Board (CIRB) reviewed your proposed study, "What is the Lived Experience of Women Prior to the Diagnosis of Acute Coronary Syndrome?" at its November 27, 2007 meeting and approved the study pending changes to the informed consent. Those changes have been received and are satisfactory which results in approval for you to proceed with your study. The approval is valid until November 27, 2008.

The CIRB considers this study non-exempt. This means the study needs to comply with the federal rules and regulations as well as those of the Bellin Health CIRB. If any changes are made to the study, informed consent or if any participants are harmed or have adverse experiences during the study, you are obligated to let the IRB know within 3-5 days. Very serious adverse outcomes should be reported within 24 hours. Changes to the study should be sent to the IRB prior to being implemented.

Please feel free to call me (920) 433-7522 or e-mail me at jamcco@bellin.org with any questions or comments.

Best wishes with your graduate studies.

Sincerely,


Joyce A. McCollum, MS, RN
CIRB Chairperson

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