CONNECTING THE DOTS:
HOW MALE CARDIAC PATIENTS INITIATE AND SUSTAIN
A HEART-HEALTHY LIFESTYLE

by

Sandra Anne Grimwood

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Abstract

80% of Canadians are at risk for some form of heart disease, disease of the coronary arteries or disease of blood vessels throughout the body. Research has shown that lifestyle modification can reduce further cardiac events and interventions. However, little is documented about the process middle-aged men use to engage in a change of health behaviour. The purpose of this study was to explore and describe the specific types of behaviours that middle-aged men with coronary artery disease (CAD) engage in when initiating and sustaining a heart-healthy lifestyle.

Nine men with CAD who had engaged in lifestyle modification were interviewed. Using a grounded theory approach, data were derived from in-depth interviews and analyzed according to the constant comparative method. Findings revealed that, for the men in this study, initiating and sustaining a heart-healthy lifestyle was equivalent to the process of “Connecting the Dots”. Connecting the Dots included the categories of Understanding Risk Factors, Negotiating/Seeking Support, and Getting Serious. Understanding risk factors encompassed two elements: making sense and confronting the disease. Having support, as the men, connected the dots provided help to initiate and sustain a change in health behaviour. Getting serious involved engaging in risk factor reduction by replacing unhealthy behaviours with health ones.

A better understanding of how middle-aged men with CAD engage in a change of health behaviour, has implications for nursing practice, patient education, policy, and may provide direction for further research. Insight into the process used by middle-aged men to engage in lifestyle modification may contribute to the body of nursing knowledge about
compliance with risk factor reduction, and will help nurses reach the ultimate goal of caring effectively for this unique population of cardiac patients.
Table of Contents

Abstract

Table of Contents

List of Figures

Acknowledgements

CHAPTER ONE: Introduction
   Background to the Problem
   Problem Statement
   Purpose of the Study
   Research Question
   Definition of Terms
   Assumptions
   Summary

CHAPTER TWO: Literature Review
   Perceptions of Health/Illness
   Perceptions of Risk
   Understanding Heart Disease
   Women’s Experience with Heart Disease
   Lifestyle Changes
   Summary

CHAPTER THREE: Methodology
   Research Design
   Sample/Participant Recruitment
   Data Collection
   Data Analysis
   Rigor
      Auditability
      Creditability and Fittingness
   Ethical Considerations
   Summary

CHAPTER FOUR: Findings and Interpretation
   Description of the Participants
   The Dots
   Connecting the Dots
      Understanding Risk Factors
      Making Sense
      Confronting the Disease
   Seeking/Negotiating Support
CHAPTER FIVE: Discussion and Implications

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rigor in This Study</td>
<td>66</td>
</tr>
<tr>
<td>Related Literature</td>
<td>67</td>
</tr>
<tr>
<td>Implications for Nursing Practice</td>
<td>69</td>
</tr>
<tr>
<td>Implications for Patient Education</td>
<td>73</td>
</tr>
<tr>
<td>Implications for Policy</td>
<td>74</td>
</tr>
<tr>
<td>Implications for Nursing Research</td>
<td>75</td>
</tr>
<tr>
<td>Summary</td>
<td>76</td>
</tr>
<tr>
<td>References</td>
<td>79</td>
</tr>
<tr>
<td>Appendix A: Interview Guide</td>
<td>88</td>
</tr>
<tr>
<td>Appendix B: Information Letter</td>
<td>89</td>
</tr>
<tr>
<td>Appendix C: Consent Form</td>
<td>91</td>
</tr>
</tbody>
</table>
List of Figures

Figure 4:1. Relationship of Categories in Connecting the Dots 65
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CHAPTER ONE

Introduction

Background to the Problem

In the past century, increases in cigarette smoking, sedentary lifestyles, and diets laden with saturated fat, cholesterol, and salt have resulted in a worldwide epidemic of heart disease (Barrett-Connor, 2002). Although this epidemic has begun to turn around in some countries, cardiovascular disease (CVD) (i.e., disease of the heart and vascular system) remains the leading cause of mortality worldwide. Recent data from the American Heart Association suggests that while the number of deaths is reportedly declining in the United States, 60 million Americans currently have some form of coronary artery disease (CAD) (Brubaker, Kaminsky, & Whaley, 2002). In Canada, the Heart and Stroke Foundation (2003), reports that 80% of Canadians are at risk for some form of heart disease, disease of the coronary arteries or disease of blood vessels throughout the body. And, while eight in ten Canadians have at least one risk factor for CVD, nearly one-third have two risk factors and another 11% have three or more risk factors.

The magnitude of CVD has important implications for our society as a whole. Of these implications, the most significant is the cost both financial and human. When one examines the financial aspect of CVD it is evident that diagnosis, treatment and the effects of living with the disease come at a tremendous cost. Health Canada estimates that CVD costs the Canadian economy over 18 billion dollars a year (Heart and Stroke Foundation of Canada, 2003). This figure represents not only the medical costs and hospitalization expenses, but also the loss of income and loss of productivity that occurs when individuals leave the work force because of a permanent disability caused by CVD.
With respect to the human cost, cardiovascular disease is the leading cause of mortality for both men and women in Canada. As of 2002, 32 percent of all male deaths and 34 percent of all female deaths are attributable to cardiovascular disease (Heart and Stroke Foundation of Canada, 2005). And, although death rates appear to be declining, diagnostic and revascularization procedures are on the rise (Brubaker, Kaminsky, & Whaley, 2002).

For those afflicted with heart disease, specifically coronary artery disease (CAD), quality of life can be diminished due to chronic pain or discomfort, activity restrictions and fear of death. For those individuals with unremitting symptoms, inability to tolerate the necessary pharmacotherapy, lack of motivation to adhere or presence of certain clinical characteristics associated with poor survival, surgical or interventional treatments such as coronary artery bypass grafting (CABG) or percutaneous coronary intervention (PCI) are necessary. As coronary artery disease commonly afflicts older individuals, the majority of patients presenting for CABG are over the age of 65 (Heart and Stroke Foundation of Canada, 2003). This fact has been substantiated through my experience as an operating room (OR) nurse in cardiac surgery.

Recently, however, I have observed that the number of coronary artery bypass procedures performed on individuals aged 44 to 54 years (i.e. middle-aged) has dramatically increased and, while females account for a portion of this population, male patients significantly outnumber female patients. This increase in surgical intervention is not surprising when it is reported that one in three men before the age of 60 can expect to develop CVD (University of Maryland, 2003). I have also found in my brief conversations with these younger male patients that many believe that the surgery offers a "cure", and that they will be able to resume their previous lifestyle following surgery.
Although CABG has been shown to relieve angina and improve quality of life, it does not remove the metabolic causes of CAD. The revascularization of the myocardium accomplished with CABG surgery does not halt the progress of atherosclerosis in the coronary arteries or prolong life (Brashers, Haak, & Richardson, 1998). Progression of native coronary disease and failure of vein grafts over the long term can lead to recurrence of symptoms and the need for repeat surgery for bypass grafting. As the 10-year survival rate is 75%, the chance of undergoing repeat surgery is increased for patients having their first operation in middle age. Consequently, this patient population must address the risk factors that influence the progression of CAD. Since risk factors such as hypertension, hyperlipidemia, smoking, sedentary life-style, stress, diabetes, and obesity contribute not only to the onset of CAD, but also to the escalation of CAD, they must be controlled over the long term. In the case of the cardiac patient a crucial transition relates to the lifestyle modifications the patient must make to prevent and reduce CAD risk. According to Rimmerman (2005) modifications in lifestyle alone can make a significant positive impact on future cardiovascular event rates.

Moreover, if CAD patients are to manage their heart disease effectively and achieve positive health outcomes, they must participate in the selection and use of appropriately focused self-care. Artinian, Magnan, Christian and Lange (2002) maintain that self-monitoring, self-care, and decision-making are essential skills for heart failure patients striving to manage their illness. The authors believe that the acquisition of appropriate knowledge related to heart failure and its management provides the basis for essential self-care behaviours. Accordingly, the provision of appropriate information and support to
patients with CAD should help to reduce or even eliminate many of the complications of this disease, including the need for repeat surgery or PCI.

However, despite the provision of preventive healthcare information, including risk factor counselling and educational materials such as pamphlets and videos, many cardiac patients find lifestyle changes that contribute to risk factor reduction (i.e., weight loss, increased physical activity, adherence to medication, smoking cessation, and dietary changes) challenging and problematic. Gulanick, Bliley, Perino, and Keough (1998) reported that patients were frustrated in their attempts to enact lifestyle changes as a result of unrealistic expectations of healthcare professionals, lack of family support, and an increasing amount of contradictory health information that appears in the media (e.g., conflicting dietary information that is reported in the popular press). In addition to the above challenges, circumstances unique to individuals also make it difficult to change health behaviour. For example, cardiac patients with young children may find it difficult to schedule time to exercise because of the demands of the family and smokers may be frustrated in their attempts to stop smoking if their spouse continues to smoke in their presence.

Nurses play an integral role in the development of strategies that provide appropriate counselling and support for cardiac patients. Nurses caring for cardiac patients are well suited to this nursing intervention because of the concentrated time they spend with patients and their knowledge of CAD and the associated risks. Prior to surgery or PCI, nurses can assess patients' readiness for change, level of knowledge about the disease and its risk factors, and introduce the initial stages of a cardiac prevention program that can be continued in the recovery period and post discharge. If nurses are to effectively serve this population of
cardiac patients, they require knowledge of the how these patients manage a problematic situation.

Moreover, because Health Canada has adopted the primary health care model, health care professionals and patients should take an active role in prevention and management of chronic diseases such as CVD. To promote prevention in health care, awareness of one’s health and wellness is crucial in order to effect change in thinking and to stimulate the commitment and actions of patients, and their families. A collaborative management approach at the primary health care level with patients, their families and health care professionals is a prerequisite to prevent many major contributors (e.g., smoking, inactivity, and unhealthy diet) to the burden of disease.

Problem Statement

Given that patients with coronary artery disease must address risk factor reduction and that many patients find the behaviour changes required for risk factor reduction challenging and problematic and that there are a large number of male middle-aged, CAD patients, the purpose of this study was to identify and provide an in-depth description of the process used by middle-aged male cardiac patients to initiate and sustain a heart-healthy lifestyle. Because of the possible long-term implications for patients with coronary artery disease (i.e., re-operation or PCI, chronic disability, loss of productivity) the study was timely and clinically relevant. As the number of middle-aged men with heart disease is likely to rise due to the increased prevalence of sedentary lifestyles and obesity (American Heart Association, 2005) there is an urgent need to improve our understanding of how men undertake changes in health behaviour. An in-depth understanding of the process by which middle-aged men with CAD initiate and sustain a heart-healthy lifestyle could ultimately
facilitate nurses' effectiveness in assisting this population. With the knowledge obtained from this qualitative study, nurses in cardiac centres will be better able to educate and support male middle-aged patients in their attempts to reduce cardiac risk factors.

**Purpose of the Study**

The purpose of this qualitative inquiry was to generate an analysis that can contribute to an emerging theory of middle-aged male cardiac patients’ response to a diagnosis of coronary artery disease and the need to engage in lifestyle modification. As these individuals are living with heart disease they are in a prime position to articulate what, if anything, triggered a change of health behaviour, and what helped to sustain that change in behaviour. In examining change of health behaviour through the eyes of middle-aged male cardiac patients, I expected to gain valuable insight into issues that affect adherence to rehabilitation, lifestyle modifications, medical therapy and the need for surgery or PCI.

A better understanding of the process that middle-aged men go through to engage in change of health-related habits has implications for healthcare. Insight into this unique population’s experience with risk factor reduction may contribute to our understanding of how to optimize opportunities for intervention and provide new knowledge of how to develop individual treatment plans for long-term lifestyle management.

**Research Question**

The question addressed in this research is: “How do middle-aged male cardiac patients initiate and sustain a heart-healthy lifestyle?”

**Definition of Terms**

Because this study focuses on the middle-aged male it is necessary to explain the intended meaning of the term middle-aged. Merriam Webster’s Collegiate Dictionary (1997)
defines middle-aged as “the period of life from about 40 to 60” (p. 736). For the purposes of this research I used the term ‘middle-aged’ to mean the period of life between 44 to 54 years of age. Second, the intended meaning of cardiac patient is a patient with coronary artery disease.

**Assumptions**

Thorne, Reimer Kirkham, and MacDonald-Emes (1997) state that qualitative researchers must explicitly account for the influence of bias and assumptions upon the research findings. An explanation of these biases and assumptions is necessary because they not only shape research interpretations but also influence the questions asked, the way they are asked, and the methods sought to answer them.

As a result of my experience as an operating room nurse in cardiac surgery, I undertook this study holding certain beliefs and making certain assumptions about middle-aged men who have CAD. The pertinent assumptions that I hold are:

1. Compliance with risk factor reduction is problematic for middle-aged male cardiac patients.
2. Despite the best efforts of healthcare professionals, risk factor counselling and knowledge of CAD does not result in changes of health behaviour.

**Summary**

In this chapter I have discussed my research interest, the purpose of the study, and provided a definition of the terminology, middle-aged cardiac patient, used in the research. In the next chapter I begin the literature review with an examination of perceptions of health, perceptions of health risk, health perception in individuals with heart disease, the female experience with heart disease, and lifestyle changes. In chapter three I discuss the research
methodology used for this study, and present the data collection and data analysis method. In chapter four, the findings are presented including the metaphor of “Connecting the Dots” that explains the process that middle-aged male cardiac patients go through to initiate and sustain a heart-healthy lifestyle. I describe each of the three categories that constitute the process, as well as how each relates to the overall metaphor. In the final chapter, I discuss the implications of the findings for nursing practice, education, policy, and research.
CHAPTER TWO

Literature Review

The purpose of the literature review described in this chapter was to evaluate the current literature and to provide a foundational forestructure on which to base the research inquiry. In keeping with the methodology of grounded theory, the review examined the existing knowledge about risk factor reduction in middle-aged males with CAD with a view to developing a rationale for the proposed research.

While the body of literature pertaining specifically to middle-aged male cardiac patients’ change in health behaviour was found to be small, the literature focusing on health perception, perception of health risk, the female experience with heart disease and CAD patients’ perception of their health was more substantial and proved germane to examining the middle-aged male’s ability to comply with risk factor reduction. The following review provides a synthesis of these sources of literature—perceptions of health, perceptions of health risk, health perception in individuals with heart disease, the female experience with heart disease, and lifestyle changes—that enhances current understanding of how middle-aged males initiate and sustain change in health behaviour and what nursing can do to make a difference.

Perceptions of Health/Illness

Significantly, little has been written about the perception of CAD from the perspective of the middle-aged male cardiac surgery patient. Although the majority of the studies reviewed have looked at the broader picture of health and have utilized samples comprised of both male and female participants of various ages, the results of these studies raise issues relevant to this research. These issues include both the influence and perception
of health status, the importance of knowledge about CAD, the perceptions of information, and the lack of knowledge not only about CAD but also about the implications of failing to implement lifestyle modifications.

In the first of these studies, Bosworth et al. (1999) "examined the descriptive relationship of self-rated health with various psychosocial measures, sociodemographic variables, CAD diagnostic/clinical measures, and medically abstracted comorbidities" (p.565). This large comparative study (n = 2855) found that an individual's functional health status and psychological well-being was central to the formation of perceived health. For example, individuals with decreased functional ability, depression or anxiety rated their health as poor. Bosworth et al. also reported that self-rated health was not highly associated with many established clinical coronary risk factors such as cholesterol levels and number of diseased arteries. The investigators accounted for this finding by the fact that these biological and physiological measures are not always associated with symptoms. Self-rated health is likely to reflect an individual's awareness of symptoms, diagnoses, and functional ability. If an individual is aware of the presence of silent risk factors then this information is more likely to affect the individual's self-perception of health. This finding emphasizes the need for patients to be aware of their risk factors so they are able to evaluate the effect of the disease themselves. Results of this study also show that "subjective and clinical views of health are not isomorphic" (p. 581). Many of the participants considered themselves to be in good to excellent physical health despite the presence of significant CAD (i.e., at least 75% narrowing in one or more coronary arteries). This finding helps to support the need to conduct my study. As a perception of good health does not equate with actual health status, patients need to understand their disease and the role they must take in controlling it. As a
result of successful coronary revascularization, middle-aged men may perceive themselves to be in good health because of the surgical intervention and, in doing so, fail to implement important lifestyle modifications that would address their risk factors.

Two studies led by Lindsay have investigated the role of health status in relation to recovery from coronary artery bypass grafting (Lindsay, Smith, Hanlon, & Wheatley, 2000; Lindsay, Smith, Hanlon, & Wheatley, 2001). In the first study, Lindsay and her colleagues used a prospective descriptive design to determine patients’ perceptions of their preoperative and postoperative health status as well as their expectations of benefit following coronary artery bypass grafting. Two hundred and fourteen participants were interviewed one month before surgery and sixteen months after. Interview analysis revealed that participant perceptions of preoperative health and well being focused on issues of dependency and impending doom (i.e., dying of a heart attack at any moment) while perceptions of postoperative health concerned freedom: freedom not only from a death sentence but also freedom to undertake activities of their own volition. With regard to expectations of benefit to health from CABG, the investigators found these to vary from the over-optimistic, and uncertain, to the unknown and to often be at odds with the documented evidence of the benefit from CABG. Participants also expressed expectations of freedom from further myocardial infarctions, independence, hope for favourable outcome, extended life expectancy, and improved quality of life. These findings suggested that more information, advice and counselling would be helpful to support patients before, during and after surgery. In addition, as the authors were not necessarily clear on how patients formulated their views on outcomes, they recommended the need for further research into this area.
In a subsequent study, Lindsay, Smith, Hanlon, and Wheatley (2001) explored the influence of health status and social support on symptomatic outcome (the presence and severity of angina and breathlessness) following CABG. This observational study used a sample of 183 patients awaiting CABG. Data were collected before and after surgery using the Short Form 36 (SF-36) Health Assessment questionnaire, the Social Networks Assessment, and a visual analogue to assess severity of angina and breathlessness. Scores on the SF-36, both preoperatively and postoperatively, showed "lower scores across all domains of health, indicating poorer health status" (p. 83). Social network scores were also reported to be lower than those of the general population. Angina and breathlessness were reported in almost all of the patients preoperatively (94.2%) and in many postoperatively (45.1% reported angina and 63.7% breathlessness). Reliability and validity of the assessment instruments was reported for the SF 36 questionnaire only, which was reported to be valid and reliable in normal populations and in CAD patients. Although this study lacked clinical confirmation (e.g., findings from exercise tolerance testing) that the symptoms (angina and breathlessness) reported by the patients were a result of myocardial ischemia, the authors' proposition that patients’ perceptions of their health status and levels of social support preoperatively were useful indicators of health status postoperatively was helpful. With this information, nurses, in the preoperative period, could implement interventions to help patients’ improve not only their levels of health but also their perceptions of health status.

In a qualitative study to increase knowledge and understanding of what it means to have CAD, Bergman and Berterö (2001) interviewed eight individuals (three women and five men) diagnosed with CAD about their life situation and their experiences in making lifestyle changes. Interviews were transcribed verbatim and the data analyzed using a
hermeneutic approach. Although findings in qualitative studies cannot be generalized, the researchers' three findings are pertinent to my investigation.

First, knowledge about CAD is a prerequisite for successful lifestyle change. The investigators found that patients identified three major causes of CAD: heredity, lifestyle (i.e., smoking and bad eating habits) and demands of self, of others, and of employers. They found that many of the informants who believed that heredity was the cause of their disease also saw it as impossible to influence. These individuals seemed resigned to having a lifelong handicap or the prospect of sudden death and consequently were unsuccessful in their attempts to effect lifestyle changes. Bergman and Bertero (2001) state, “knowledge about CAD needs to be increased, providing a better understanding of the necessity of lifestyle changes and medical treatments” (p. 740). In order to have a solid foundation on which to base their rehabilitation, patients need to understand how the heart works, what has happened to it, what a myocardial infarction is, or what vascular spasm is. Nurses, because of their accessibility to patients, play a key role in providing patients with information and teaching them about the importance and possibility of affecting the course of the disease, specifically that relapse can be prevented or mitigated.

Second, Bergman and Berterö (2001) found that the patients themselves plus external support were two important prerequisites for successful rehabilitation. They found that those informants who not only made their own decision to start rehabilitation but also believed that they were not victims of circumstances had more success in changing their lifestyle. In terms of social support, information and easy access to the health care system were of great importance to informants. Many stated that conversations with competent knowledgeable personnel were healing and comforting. This second finding further supports the need to
conduct this study. Because nurses have an important role in supporting patients and empowering them to make lifestyle changes and daily activities manageable, they must have a clear understanding of how patients see themselves in terms of their disease so they can individualize care.

Third, Bergman and Berterö (2001) found that feelings of confusion, grief, and uncertainty were apparent when the informants talked about their loss of health. The informants explained that these feelings made it difficult to undertake lifestyle changes, return to work and maintain a social life. The authors believed that these feelings were obstacles, which could be overcome with support and guidance from nurses. Again, providing information was key to helping patients make lifestyle changes. Nurses must work with patients to help them understand the need for patience and persistence during rehabilitation and more importantly help them understand the significance of their own contribution.

In 2000, in the United Kingdom, Davies conducted a study utilizing descriptive survey methodology to identify patients’ and carers’ perceptions of factors that influence recovery following coronary artery bypass grafting. The study sought to determine patients’ and carers’ views of information provided by hospital staff, anxiety and depression experienced by patients and carers, and the correlation between information and reports of anxiety and depression. A postal survey sent to 60 patients and carers revealed that patients rated the information they were provided more highly than did their carers and that nurses were more highly rated than doctors and physiotherapists as providers of information. Moreover, high levels of satisfaction with the information provided were associated with lower scores on the Hospital Anxiety Depression Scale. Although the provision of
information was deemed helpful by patients and carers, it was also seen as somewhat
haphazard and opportunistic. Based on his findings, Davies concluded a need for further
research that would explore the precise needs of patients and carers so they are both better
prepared for surgery and recovery. This conclusion provides foundation for this study as it
substantiates the need for new models of education and support that are based on the
individual needs of patients and carers. Moreover, Davies' finding that nurses were perceived
as providing more useful information than other professionals further strengthens my
position relating to the role of nursing in patient education.

In a study specific to chronically ill patients, Wichowski and Kubsch (1997)
conducted a survey to determine the relationship between self-perception of health and
compliance with health care regimens. A cross-sectional convenience sample of 106 subjects
(77 adults and 29 children) with a chronic illness of at least two years duration was chosen
from a diabetic clinic. The sample was further distinguished by control of their illness as
determined by blood sugar levels: one group who were in control of their illness (blood
sugars within normal limits) and another group who were not (blood sugars above normal
limits). A 10-item questionnaire designed by the researchers was used; assessment of the
instrument's reliability and validity are reported and appears appropriate for the researchers'
goal. Data analysis demonstrated a significant but negative relationship between self-
perception of health and compliance behaviours. That is, the less the perception of illness the
less compliance demonstrated, especially in the adult group. From this finding, the
investigators suggested that adults who do not perceive themselves as ill do not comply with
their treatment routines. They further postulated that by the activity of non-compliance adults
deny illness by adhering to previous lifestyle routines. Although this study focused on
diabetic patients, the results can be applied to patients with CAD. If CAD patients perceive themselves as no longer having a disease after undergoing coronary artery bypass, they may not comply with necessary lifestyle modifications. To address this concern, nurses will need to focus on helping individuals change their self-perception and become more compliant with health care regimens.

In 2001, Evangelista, Kagawa-Singer, and Dracup used both quantitative and qualitative methods to determine whether gender differences exist in health perceptions, psychological adjustment to illness, and concerns related to heart failure. Thirty-two patients were surveyed regarding health perceptions and psychological adjustment to illness. Data analysis found that women had significantly higher scores on measures of health perception and psychological adjustment to illness and also constructed a more positive meaning to their illness than did men. In addition to questionnaires to elicit data about perceptions and adjustment, Evangelista, Kagawa-Singer, and Dracup included data from open-ended interviews eliciting information on concerns related to heart failure. The authors suggested the higher scores could be most likely explained by the significant difference that existed between the genders in terms of age and employment status. They maintained that as older people have lower expectations regarding their health and less to lose from being ill than do younger patients, patient teaching/counselling should be tailored to address the gender-specific concerns of men and women with heart failure.

In a hermeneutic phenomenological study, MacDermott (2002) sought to describe the experience of living with angina pectoris from the perspective of individuals diagnosed with it. Data was obtained using unstructured interviews with seven people living with chronic stable angina. Seven themes emerged from the data: limitation and adjustment, resignation,
indignation, caution, reluctant compliance, surprise, and the unknown. None of the subjects could identify more than one risk factor but all expressed surprise that they had developed the disease. MacDermott (2002) concluded that the patients seemed to focus on psychological causes of angina such as worry and stress while health care providers tend to emphasize physiological causes. "Consequently, patients may receive little help in controlling those factors that they perceive as causative, while at the same time they are encouraged to follow treatment regimes that may seem irrelevant to them" (p. 271). Although limited by the small sample size, the findings of this study provide a basis on which to develop nursing knowledge about care of patients with heart disease.

Eastwood (2000) undertook a naturalistic inquiry to determine the rationale and influences on change of risk factor behaviour in males following percutaneous transluminal coronary PCI/intracoronary stenting. Family considerations, psychological health perspectives, return to work issues and problems with rehabilitation programs were identified as factors influencing decisions to change lifestyle patterns. Like Bosworth et al. (1999), Eastwood found that a positive psychological health perspective led to a negative perception about the need to change their lifestyle. Despite the small sample size (n=4), this finding had significance for this study. Eastwood's finding supports my suspicion that younger men who feel well after surgery will also not see the need for a change in lifestyle behaviours. In addition, his belief that nurses have the best opportunity to provide relevant information to cardiac patients reflects my own beliefs on the role of nurses in cardiac care.

Perceptions of Risk

The findings of three studies raise issues relevant to this research, as they focus on perception of risk. The issues are relevant because the perception of personal risk for a
disease is an important factor in many preventative health behaviours. As suggested by the Health Belief Model (Sarafino, 1997) an individual is more likely to take a recommended health action if the person perceives himself or herself vulnerable to getting a disease, the person perceives that getting the disease is serious and the benefits of a recommended health action outweigh the barriers to the action.

In the first of these studies, Meischke et al. (2000) investigated factors that are associated with personal risk perceptions of having an acute myocardial infarction (AMI). A random-digit-dial survey was conducted among 1294 participants as part of the Rapid Early Action for Coronary Treatment (REACT) trial. The investigators analyzed how perceived AMI risk was related to people’s perceptions regarding their general health, risk factor status, awareness of AMI in their social environment, knowledge about general AMI risk and demographic variables. Their findings indicated that perceived general health, risk-factor status, and knowledge of general AMI risk are important factors in determining personal AMI risk perceptions. First, as self-reported risk factors increased, perceived health status decreased; second, as respondents reported worse general health, their personal risk perception of AMI increased significantly; third, knowledge of general AMI risk did not have a significant effect on perceived personal risk of AMI. They also found that participants were overly optimistic about their risks of having a heart attack, particularly in light of the many risk factors that they reported. Significant for this research is the finding that people who experienced an AMI and survived felt that their situation was being managed and under control. This finding suggests that interventions should be designed to focus on correcting misconceptions in those individuals who have yet to adopt lifestyle changes.
In a study which sought to identify and correct inaccurate perceptions of risk, Kreuter and Strecher (1995) selected a convenience sample of 1317 adult patients in a primary care setting. Participants' perceived risks of heart attack, stroke, cancer and motor vehicle crash were assessed and compared with a measure of risk derived from a health risk appraisal. Participants were randomly assigned to receive computer-generated, individualized risk feedback, risk feedback plus behavioural change feedback, or no feedback. Changes in perceived risk from baseline to a six-month follow-up were compared across the three groups. The comparison of perceived risk with an objective measure of risk revealed optimistic biases for heart attack and stroke risks and pessimistic biases for cancer and motor vehicle crash risks. It was also found that providing patients with individualized risk feedback was effective in increasing perceived stroke risk among those who had underestimated their stroke risk at baseline and in reducing perceived risk of cancer among patients who had overestimated their cancer risk at baseline. Individualized feedback, however, did not alter patients' perceptions of their heart attack and motor vehicle risks.

The results of this study are relevant for this research because perceived risk is an important factor in the behavioural change process. When people perceive their risk as high, they are more apt to take preventative action to reduce risk (Kreuter & Strecher, 1995). As it has been found that many people underestimate their risk or have an optimistic bias of health-related problems it is important to identify risk perception biases if interventions aimed at changing health-related behaviours are to succeed.

In another study, Silagy, Muir, Coulter, Thorogood, and Roe (1993) examined the relationship between subjects' level of cardiovascular risk and attitudes to lifestyle. Over five thousand individuals (n=5,803) were asked if they perceived a risk to their own health as a
result of specific lifestyle behaviours (smoking, exercise level, and diet); whether they wanted to change their lifestyle; and whether they had made a serious attempt to do so. Results of the study showed that the health risks of smoking and lack of exercise are recognized by most people. Attitudes to diet were found to be more complex with those individuals with the highest level of fat intake the least likely to perceive their diet as harmful. Large gender differences existed with perceptions of risk to health. Obese women were more likely to believe their diet to be harmful and were significantly more motivated to change their diet than obese men. In addition, significantly more female than male smokers perceived their habit to be harmful and had attempted to quit. It was also found that the number of people wanting to change their diet rose with number of risk factors, but the number wanting to increase exercise was inversely related to the number of risk factors. No trend was seen with respect to stopping smoking.

Understanding Heart Disease

In a qualitative study, Winters (1997) gathered information from patients with chronic heart disease about the experience of living with chronic heart disease. This descriptive exploratory study had a purposive sample of four women and six men. Two methods of data collection were used: a semi-structured interview and the completion of the community form of the Mishel Uncertainty in Illness scale. Scores on this instrument, which measures the uncertainty perceived in illness, indicated little uncertainty concerning their illness for some participants and more uncertainty than average for the participant waiting for a heart transplant. Cronbach’s alpha was found to be .98 for the Mishel Uncertainty in Illness scale. Validity was supported by references to previous research conducted by Mishel. Winters (1997) concludes that “the preliminary findings, uncertainty, change over time,
conflict, and playing the game, may facilitate nurses' understanding of chronic heart disease
and provide insights that alter clinical practice” (p. 9). This conclusion supports the need to
conduct the current study: until nurses recognize and understand the meaning of the impact
of heart disease upon the individual, nurses will be unable to provide consistent supportive
care to patients with heart disease.

A study conducted by Artinian, Magnan, Christian, and Lange (2002) is also relevant
to understanding heart disease. These investigators studied knowledge about heart failure
(HF) and related treatment and to explore factors associated with higher levels of knowledge.
This descriptive correlational design study had a convenience sample of 123 participants.
Separate instruments were used to collect sociodemographic information, to measure patient
knowledge about HF, and to measure health (i.e., New York Heart Association Functional
Classification and a self-report of perceived health). Data analysis revealed that, irrespective
of age, both men and women had low levels of knowledge about HF and its management. In
addition, although the majority of the sample could recognize symptoms of HF, most had
low levels of knowledge about their medications, weight monitoring, and appropriate self-
care actions. Despite the limitations of using a nonprobability sample and the marginally
adequate internal consistency reliability of the HF Knowledge Test (Cronbach’s alpha of
.61), these findings are significant for health care professionals as they indicate a need for
providing information and support in ways that patients can understand and accept.

In a third study investigating knowledge of heart disease, Wiles (1998) interviewed
25 people who had experienced a heart attack and had been admitted to hospital. The
investigator's aim was to examine participants' understanding of heart attack and recovery
and the salience that lifestyle change has in the context of their understanding. Each person
was interviewed twice, at two weeks and five months following their heart attack. The study found that the information provided by health care professionals about recovery was based on a simplified version of epidemiological evidence and that this information played a major role in people’s understanding of heart attack and their future risk in the early period following heart attack. Later as people came to terms with the shock of the event, trust in “official” explanations diminished and contradicting lay epidemiology became more prominent. The author concluded that “the failure to acknowledge the random nature of the occurrence of heart attack, the severity of heart attack and the level of recovery from heart attack is a central feature in people’s reluctance to view lifestyle change as a rational action to take to prevent a further cardiac event” (p. 1485). The author also speculated that providing patients with simplified epidemiological information, which for many does not reflect their later experience, can have negative consequences for patients as they later have to come to terms with acute disappointment when their anticipated level of recovery is not realized.

Emslie, Hunt, and Watt (2001) conducted a qualitative study to increase understanding about both the public’s perceptions of the causes and consequences of heart disease and barriers to adopting less coronary-prone behaviours. Sixty-one participants were purposively selected from a large cross-sectional survey undertaken in 1996. Analysis of the interview data found that almost all of the respondents described the cause of heart disease as multifactorial. In describing heart problems in general, respondents focused on fatal heart attack rather than other manifestations of heart disease. Heart attacks were perceived as a quick and preferred form of death, and a less-feared form of illness. Many participants stated that they would rather die of a sudden fatal heart attack than die a slow, lingering death.
Descriptions of fatal heart attacks also implied that heart disease was a natural way to die in old age. These perceptions of heart disease are cause of some concern for health care professionals. The perception of fatal heart attack as a "good" death and heart attacks in old age as natural have important implications for health care providers as these notions may undermine motivations to modify behavioural risk factors for CHD.

Women's Experience with Heart Disease

Women's experience with heart disease has been explored by a number of researchers including LaCharity (1997, 1999), Wilcox and Stefanick (1999), Fleury, Sedikides, and Lunsford (2001) and Plach and Stevens (2001). Four of these studies investigated the experiences of women with CAD (LaCharity, 1997, 1999; Fleury, Sedikides, & Lunsford, 2001; Plach and Stevens, 2001) and one study by Wilcox and Stefanick (1999) explored knowledge and perceived risks of CAD. Although these studies were concerned with the female perspective, they are relevant to this inquiry as they provide some insight into issues that pertain to both men and women such as the need for support and managing lifestyle changes.

In a qualitative study, LaCharity (1997) investigated the experience of postmenopausal women who had been diagnosed with CAD for at least three months. In-depth interviews were conducted with 12 menopausal women. Four major themes emerged from the data a) the effects of having CAD (e.g., decreased energy, anger, fear, guilt), b) managing lifestyle changes, c) identifying support systems, and d) adapting and coping with CAD. The author suggested that the findings of this study both support and refute previous research, providing new insight into the experiences of postmenopausal women. Although the application of the findings is limited because of the racial, geographic, and economic
homogeneity of the population interviewed, the study helps to increase the knowledge about women with CAD.

Building on her previous work, LaCharity (1999) explored the experiences of younger women with CAD. In this investigation 11 premenopausal women were interviewed about their risk factors, initial CAD symptoms and their experiences with CAD. All participants had strong family history of CAD but several believed they were safe until after menopause or were not at risk because of their gender. Participants expressed concerns about diet, exercise, careers, and relationships. Coping and emotional effects were also discussed. In findings similar to her earlier study, participants felt anger, fear and guilt after being diagnosed with CAD and used the strategy of planned exceptions to cope with lifestyle changes. Unique experiences of younger women included “the misconception about their risk for developing CAD, failure to recognize atypical CAD symptoms, focus on the importance of returning to work, difficulties encountered raising small children, problems with return to intimate sexual relationships, and the desire to rapidly bypass negative emotional responses to CAD and return to as normal a life as possible” (p. 780). These findings showed that although younger women share many of the same concerns as postmenopausal women, they also have significant and unique needs. Healthcare providers must be aware of these needs if they are to provide care that is holistic and relevant.

Fleury, Sedikides, and Lunsford (2001) also examined the experiences of women living with CAD. In this study, the investigators focussed specifically, on the role of self in recovery from an acute cardiac event. Data were collected from 13 women in a group format over a period of nine months. The constant comparative method was used in data analysis. The women described how “self-definitions and meanings developed and changed in
response to the many challenges of chronic illness” (p. 75). Three categories, seeking
meaning, creating mastery, and accepting the self, and an overarching theme of
connectedness with others emerged from the data. Nurses will need to be aware of the role of
self and psychosocial responses related to rehabilitation and recovery. In addition,
interventions that promote the creation of meaning, personal strengths, self-acceptance, and
connection with others need to be designed to meet women's needs after a cardiac event.

Plach and Stevens (2001) described the experiences of midlife women with heart
disease after cardiac surgery. Their study revealed that the overall sense of living with heart
disease was one of paradox. This paradoxical experience was further elaborated within five
thematic categories: expectations about heart disease (surprise and premonition), perceptions
of well-being (ambivalence), lifestyle changes since diagnosis (positive but difficult), impact
on relationships and roles (enhanced and detrimental effects), and feelings about heart
disease (positive and negative emotions). Generally, these women found themselves at odds
with their bodies, with their feelings, with their families, and with the futures they had
expected. The authors concluded that given the experiences of these women, it is not likely
that standardized instructions about reducing risks and improving heart health will work
unless healthcare providers are willing to explore with women their contradictory feelings
about having heart disease and the paradoxical social situations they find themselves in.

In a study specific to middle-aged and older women, Wilcox and Stefanick (1999)
surveyed 200 women aged 41 to 95 years to determine knowledge and perceived risk of
coronary heart disease and cancers. Both middle-aged and older women were found to lack
knowledge regarding the causes of mortality in women. Only 34% of older women knew that
CHD is the leading cause of death among women aged 65 years and older. Women also
lacked knowledge about the leading cause of cancer mortality in women of different ages. In addition, despite the increased risk for heart disease with increasing age, older women did not perceive themselves to be at greater risk for heart disease compared with middle-aged women. Although the ability to generalize the results of this study is limited by the over-representation of well educated, healthy Caucasian women, the results have practical implications for health behaviours of older women. If women in later life are faced with confusing health care decisions they may be unable to make well-informed choices if they lack accurate knowledge and perceived risks of major diseases.

**Lifestyle Changes**

Although there is a large body of evidence showing that the risk of CAD events can be significantly reduced through modification of risk factors (Hu & Willett, 2002; Lisspers, Hofman-Bang, et al., 1999; Ornish, et al., 1998; Rutledge, et al., 1999), little research exists on how and why middle-aged males with CAD change their health behaviour. In a study using a grounded theory approach, Meillier, Lund, and Kok (1997) sought to identify cues to action in the context of changes of health habits. Forty in-depth interviews were conducted with twenty-one 40-year-old Danish men. The subjects comprised 10 men who had undergone a preventative coronary examination and found to have a low or moderate risk of CHD and 11 men who did not receive the examination. Analysis of the interview data revealed changes in health habits as a result of symptoms of disease, disease and death among friends and relatives, changes in self-image, exceeding limits (i.e., gaining weight), social influence and changes in life circumstances. While this study’s findings provide some insight into how individuals initiate a process of change and what factors trigger the change, they cannot be generalized to the cardiac patient population. As the subjects had either low to
moderate or no risk of CHD, their “cues to action” may be different than those individuals who have CAD. Additional studies regarding patients who have undergone bypass surgery or PCI need to be done.

In a study specific to patients who had undergone PCI, Gulanick, et al. (1998) implemented a qualitative study to identify patients’ reactions to suggested lifestyle changes, barriers and facilitators to risk reduction, sources of health information, and to elicit suggestions for nursing interventions. For purposes of data collection, the forty-five participants were divided into focus groups based on participant characteristics and availability. From the data six major themes concerning lifestyle changes were identified. These included 1) seeking control over their disease from successful lifestyle modifications, 2) compromise with lifestyle recommendations to maintain quality of life, 3) frustration with enacting lifestyle changes, 4) sense of powerlessness to stop disease progression, 5) acceptance of the uncertain nature of their illness, and 6) concerns about the uncertainty of the future. Facilitators to lifestyle change were a) availability of low fat foods, b) permission to cheat occasionally on one’s diet, c) desire to stay alive, and d) participation in a cardiac rehabilitation program. Barriers included a) lack of spousal support, b) difficulty following diet restrictions, c) other medical problems that limited physical activity (e.g., arthritis), d) lack of willpower and fear of overexertion, and e) difficulty coping with stress. While this study’s findings make an important contribution to the body of knowledge on lifestyle change, they reflect views developed through interaction with other members of a focus group. The current study used one-on-one interviews to capture individual perspectives.

In Sweden, Lisspers, Sundin, et al. (1999) randomly assigned 93 PCI patients to either an intervention group or control group to assess the effects of a comprehensive
behaviourally-oriented program on lifestyle change. Assessments of lifestyle behaviours, psychological factors, biological risk factors and rehabilitation and clinical events (i.e., readmission, re-operation or PCI) were conducted at the onset of the study and at the end of one year. The findings revealed a significant increase in exercise frequency in the intervention group compared with control group. A significant difference in diet habits was also found between the two groups, with the intervention group showing an increase in both dietary knowledge and healthy dietary habits. Among those who smoked, it was found that smoking decreased in the intervention group while it increased in the control group. No significant differences in stress management, psychological factors (i.e., anger, depression, anxiety) or clinical events were found between the two groups. An equal proportion of both groups (23%) experienced some type of clinical event during the year of follow-up. Although this intervention was effective on diet, exercise and smoking, its lack of effect on morbidity and psychological factors demonstrate the need for further development of interventions. The authors suggested that if an intervention is to be of value it must produce lifestyle changes that positively affect the occurrence of new coronary events, mortality, the need for hospital treatment, quality of life, and return to work.

In a similar study, Nisbeth, Klausen, and Andersen (2000) sought to investigate the need for counselling and its effect on willingness and ability to change lifestyle, and subsequent changes in CHD risk factors. Using an experimental design, 152 male employees of a computer company, 25 to 45 years of age, were randomly assigned to an intervention group or a control group. The intervention group was further divided into subgroups based on the participants' choices after counselling (i.e., some participants were advised to exercise and diet, some to stop smoking and diet, and some to do all three). Changes were evaluated
after one year. The findings revealed that the exercise program was successful in terms of adherence and favourable changes to CHD risk factors. The dietary and smoking programs were reported to be less successful with poor adherence to the programs and little motivation to change habits. The investigators concluded that counselling alone was not enough to motivate committed changes in dietary and smoking habits and that other preventative strategies should be used. Although the findings of this study varied somewhat from the earlier findings of Lisspers, Sundin, et al. (1999), they also supported the need for better cardiac prevention programs. The findings of the current study provide important information on the process of initiating and sustaining heart healthy habits. This information can then be used to develop a more effective prevention program.

Salmon (2001) assessed 30 men and 30 women to determine whether a difference existed between genders in compliance to a heart-healthy lifestyle and whether the stress of CABG surgery caused the genders to become more compliant. The RIKSO Heart Hazard Appraisal tool was used to determine both preoperative and postoperative compliance with risk factor reduction. The tool was reported as having a reliability coefficient of 0.76. Data analysis revealed that a statistically significant difference existed between men and women, with men having a lower cardiac risk and better compliance to a heart-healthy lifestyle, both before and after surgery. In addition, a significant difference existed for both men and women in the compliance with reduction of modifiable risk factors before and after CABG surgery, with compliance being better after surgery. Although this study found that risk factor reduction was affected by the experience of having surgery, it did not measure the motivator for this change. Salmon implied that both the men and the women in this study complied with risk factor reduction because of a feeling of increased risk of mortality. This
study supported that persons are capable of positively changing their health behaviours after surgery. As it did not address what actually motivated the change in health behaviour, the author suggested a need for further research addressing specific motivators for a heart-healthy lifestyle following surgery.

Summary

CAD is a major health problem; it accounts for the greatest percentage of deaths in Canada and consumes a significant portion of the health care dollar due to the high cost of diagnosis and treatment (Health Canada, 2003). Also adding to the burden of this disease are personal and emotional components such as long-term disability, dependency on others, and dependency on medications. Both the economic and personal burdens of CAD demonstrate the need to reduce its incidence, improve the treatment of its symptoms, and reduce its long-term disability and mortality. Although CAD cannot be cured, it can often be successfully managed by addressing the known risk factors. Primary prevention, by risk factor modification, can reduce the incidence of the disease, secondary prevention, by management of the disease can increase survival, and tertiary prevention, through lifestyle changes can further reduce disability and enhance individual quality of life.

Cardiac patients' perceptions of their health and heart disease, and their knowledge of CAD, affect both their recovery and their willingness to adopt enduring lifestyle changes. It is essential for nurses to intervene to help middle-aged male cardiac patients achieve positive outcomes and sustain lifestyle changes. The literature however, does not provide sufficient credible knowledge about the process used by middle-aged men to engage in a change of health behaviour. Most studies have focused on the perception of global health status in a diverse group of patients rather than on the perception of a specific illness in a specific
population (Bosworth et al., 1999; Evangelista, Kagawa-Singer, & Dracup, 2001; Lindsay, Smith, Hanlon, & Wheatley, 2000, 2001; Wichowski & Kubsch, 1997). And, while the level of knowledge about CAD seems to influence behavioural change in some patients with heart disease (Artinian, Magnan, Christian, & Lange, 2002), little information exists informing us as to whether or not they address risk factors in an attempt to control their disease. Through the use of grounded theory methodology this qualitative study aimed to develop a theory that explained the process by which middle-aged men with CAD initiated and sustained lifestyle changes. The findings may contribute to nurses' understanding of how this population experiences their health and illness and what nurses can do to make a difference.
CHAPTER THREE

Methodology

Research Design

The purpose of this study was to explore and describe the specific type of behaviour used by middle-aged males with CAD to initiate and sustain a heart-healthy lifestyle. Because middle-aged men with CAD share common circumstances and experience common meanings and behaviours, they are in the best position to provide information that will help nurses understand their experience. Qualitative research methods allow researchers to explore a human experience from the perspective of the participants under investigation, thus facilitating an understanding of phenomenon from the “emic” perspective. Grounded theory is an appropriate qualitative method for this work because it seeks to develop a theoretical explanation of social phenomena (Corbin & Strauss, 1990). According to Benoliel (1996), theory generated through grounded theory research highlights “the (a) complexities of people undergoing change, (b) influence of social interactions on outcomes, (c) critical junctures that affect processes of adaptation, and (d) ways by which the social environment influences human experience” (p. 417).

Grounded theory is a qualitative approach to research, with origins in the interpretive tradition of symbolic interactionism (Benoliel, 1996). The philosophy of symbolic interactionism posits that human behaviour is developed through social interaction with others and that actions are related to beliefs. The theory also explains that it is through interaction with others that one’s reality is expressed and communicated (Hutchinson & Wilson, 2001).
Because the intent of grounded theory research is to develop a theory which explains human behaviour, it is different than other qualitative research methods (Bailey, 1997). This difference manifests itself in the methodological framework that provides direction to the grounded theory study. Unlike other methodologies, grounded theory does not follow the usual chronological stages of traditional research; rather data collection, sampling, data analysis, and formulation of grounded theory often take place simultaneously. This approach allows the researcher the flexibility and freedom to explore the phenomenon in depth and to develop the theory inductively from the data.

As the purpose of this grounded theory study was to generate a theory connected to the data, I used (a) ongoing and concurrent data collection, (b) constant comparative analysis, (b) intentional sampling of subjects who could provide information on the process of engaging in risk factor reduction, and (c) strategies to ensure the validity of the study. The grounded theory research process was driven by the data generated by the participants. The process of initiating and sustaining a heart-healthy lifestyle was created from the ground up, from the patients’ rather than the investigator’s perspective.

In this research, I used grounded theory as it fit the purpose of the study, which was to provide a framework to guide the practice of cardiac nurses caring for middle-aged male cardiac patients.

Sample/Participant Recruitment

The sample for this study was initially selected based on established criteria and for the information they could yield about the experience of initiating and sustaining a heart healthy lifestyle. Purposive sampling, a non-probability sampling technique, was used to select the first two subjects. Polit, Beck, and Hungler (2001) define purposive sampling as a
"method in which the researcher selects study participants on the basis of personal judgement about which ones will be most representative or productive" (p. 468). In addition, as all the actors in the setting are not equally informed about the knowledge sought by the investigator, purposive sampling allows the selection of the informants according to the theoretical needs and direction of the study (Strauss & Corbin, 1990).

The remainder of the participants were selected for the study based on the premise that sampling decisions must be theoretically informed and await the emergence of a guiding theory (Dey, 1999). That is, a decision to seek more information about similar or different experiences from similar or different participants was based on analytic grounds after some data had been collected. Purposive sampling for maximum variation was used to guide sampling decisions to allow sampling to continue until data saturation occurs. Morse (2000), states that 20 to 30 participants may be needed to achieve the richness of data required in grounded theory. However, due to my limited resources I was only able to interview nine subjects and consequently did not achieve full saturation of the categories.

As sampling, data collection, and data analysis occur concurrently in grounded theory methodology, two subjects were initially recruited and interviewed, and their interviews transcribed and analyzed. Categories emerging from the data analysis, as well as demographic and medical characteristics of these initial subjects directed further data collection. That is, I sought to interview men who had undergone different procedures as well as men who were in different phases of their lifestyle changes. A variety of subjects adds diversity and richness to the description of the phenomenon and ensures that all areas of the phenomenon are addressed (Morse & Field, 1995).
The target population for this study consisted of men with CAD who were participating in or had completed a phase II cardiac rehabilitation program and had engaged in lifestyle changes. Targeted subjects were between 44 to 54 years of age and able to understand and speak English.

Participants were recruited through a phase II cardiac rehabilitation program affiliated with a university teaching hospital. Recruitment was conducted through an information letter (see Appendix B) that outlined the purpose of the study. The letter also asked those interested in more information or in participating, to complete the tear-off section at the bottom of the letter and return it to the nurse in the rehabilitation program. When men who fit my criteria arrived at the Program’s facility, the nurse assigned to their care briefly explained the purpose of the study and gave them a copy of the Information Letter (see Appendix B).

Those individuals who indicated a willingness to participate were contacted by telephone to arrange a preliminary meeting. At this meeting, I reviewed the Information Letter (see Appendix B) and the Consent Form (see Appendix C), gave the participants another opportunity to ask questions and arranged a time and date for the interview. At the conclusion of this meeting, willing participants were asked to sign the consent, indicating that they informed and consenting to participate in the study.

Data Collection

Thorne et al. (1997) contend that people who have lived with an experience are the best source of expert knowledge about that experience, and that this knowledge may be elicited through in-depth personal interviews and participant observation. For this study, in-depth personal interviews with individuals who have lived with the experience, field notes and theoretical memos were the main sources of data.
I interviewed nine men who fit the criteria established for the study. Of the nine interviews, four were conducted in a private area in the hospital, two at the participants' homes, and three by telephone. The interviews were unstructured and lasted from 45 to 90 minutes. The interview began with one open-ended question, “What changes did you make in your lifestyle after you discovered you had coronary artery disease?” Unstructured interviews according to Polit et al (2001) “encourage respondents to define the important dimensions of a phenomenon and to elaborate on what is relevant to them, rather than being guided by the investigator’s a priori notions of relevance” (p. 264). Subsequent reflexive comments, probes, and questions that arose from participant’s story were also used to help the participant clarify or elaborate on ideas or statements (see Appendix A).

Field notes and theoretical memoing were also used as data collection methods. Immediately following each interview, observations and impressions that occurred during the interview process were recorded in a journal. These field notes then become data to be coded in the analysis. Ideas that developed during the subsequent data analysis were also recorded. These theoretical memos are integral to the process as they help to develop the characteristics of the categories and to create the emerging theory (Backman & Kyngas, 1999).

Additionally, a demographic questionnaire administered at the beginning of each interview was used to collect data regarding length of disease, treatment received (i.e., medical therapy, surgery or PCI), age, education, and occupation.

**Data Analysis**

According to Morse and Field (1995) qualitative analysis is “a process of fitting data together, of making the invisible obvious, of linking and attributing consequences to antecedents. It is a process of conjecture and verification, of correction and modification, of
suggestion and defense" (p. 126). Fundamental to this process is the researcher’s full comprehension of the data, which occurs through total immersion in the data. Thorne et al. (1997) recommend that researchers repeatedly immerse themselves in the data before they begin to code, classify or create linkages. This immersion in the data along with additional strategic periods of immersion in the field enhances the refinement of the inquiry, the assessment of developing conceptualizations, and the testing of emergent abstractions. Ultimately, the aim of grounded therapy is to produce a theory from data that will fit the situation being researched and work when tested.

Data analysis was conducted concurrently with sampling and data collection. In the first phase of data analysis, level I coding, transcriptions were read and re-read, searching for words that described the action in the setting. These words were written in the margin next to the line of text in which they appeared and identified as substantive codes (Hutchinson & Wilson, 2001). These substantive codes were based only on the language of the data to prevent the influence of preconceived impressions. For example, when asked about risk factors, one participant replied, “I have a bad family history and I was quite obese at the time.” That data was coded “relating risk factors.” In addition, each sentence was coded into as many codes as possible to ensure full theoretical coverage.

While level I coding breaks the data into small pieces, the second phase of data analysis, level II coding elevates the data to more abstract levels (Hutchinson & Wilson, 2001). In this phase, all level I codes were condensed and grouped in categories. Axial coding was used to relate categories to their subcategories and to test the relationships among the data. The “coding paradigm” of conditions, context, strategies, and consequences was used to guide the linkage of subcategories to categories (Corbin & Strauss, 1990). Through
selective sampling, the developing conceptual framework was tested by collecting data to prove or disprove the framework hypothesis.

During the final phase of data analysis, selective coding was used for guidance but did not result in the selection of one core category. Instead, once saturation of codes, categories, and constructs was reached or no new conceptual information was available to indicate the need for new codes or expansion of existing ones, three main categories were identified. At this juncture, the data were woven back together again, and elements of a theory grounded in the data, began to emerge (Hutchinson & Wilson, 2001).

The constant comparative method of data analysis was used throughout all phases of data analysis. As an incident was noted it was compared against other incidents for similarities and differences. This process of comparison clarifies relations among the categories with similarities between incidents defining the basic properties of a category or construct, and certain differences between incidents establishing boundaries. In addition to incidents, behavioural patterns of different groups sampled were compared. For example, data from men who received medical therapy was compared to those who received PCI. According to Hutchinson and Wilson (2001), such comparisons maximize differences and variation and contribute significantly to the richness of the theory.

Writing of theoretical memos was also undertaken during the data analysis. Categories, hypotheses, and questions that evolved from the analytic process were kept in a journal. In addition, to providing an audit trail, theoretical memoing allows the investigator to conceptualize ideas and assess if and how the concepts fit together (Hutchinson & Wilson, 2001).
Finally, as the theory began to emerge, a second review of the literature was conducted. In grounded theory, the literature is used to illuminate and extend the proposed theory, establishing an essential link between the theory and reality (Hutchinson & Wilson, 2001). Once a tentative theory was formulated, the investigator asked selected informants if the emerging theory accurately described the process they used when initiating and sustaining a heart-healthy lifestyle.

**Rigor**

Due to the partially emergent design of qualitative research, attention to rigor and credibility in the process and the reporting of that process is critical (Thorne et al., 1997). Although there is an array of approaches used to judge the rigor of scientific inquiry, this study took direction from Sandelowski’s (1986) description of Guba and Lincoln’s approach to rigor, as it is congruent with the study’s methodology. Rigor therefore, was measured using the criteria of auditability, credibility, fittingness, and confirmability.

**Auditability**

Sandelowski (1986) states that a study and its findings are auditable when “another researcher can clearly follow the “decision trail” used by the investigator” (p. 33) and in following that trail, arrive at a comparable, not contradictory, conclusion. A decision trail not only allows other researchers to retrace the development of abstractions but also provides support for the analytic direction taken in the study. To this end, a decision trail was maintained throughout the entire study. Details of all sources of data, collection techniques and experiences, assumptions made, decisions taken, meanings interpreted, influences on the investigator, and checks for credibility and fittingness were documented.
Creditability and Fittingness

For a study to be credible, the descriptions or interpretations of the participants’ experience must be accurate (Sandelowski, 1986). That is, conceptualizations that are formulated from the participants’ perceptions must be grounded in the data and representative of shared realities (Thorne et al., 1997). To ensure that this occurred, critical consideration of beginning conceptualizations representing the whole rather than the individual were sought from some thesis committee members. In addition, findings were also shared with a clinical nurse specialist in cardiac surgery at the study site. Thorne, Reimer Kirkham, and O’Flynn-Magee (2004) state that valid interpretive descriptions should be able to pass the “thoughtful clinician test” (p. 17) in which individuals who have expert knowledge find the claims plausible and confirmatory of their own clinical hunches.

The investigator’s influence on the participants and vice versa were documented in the field notes to maintain a separation between the investigator’s own experiences and those of the participants. To account for bias, a reflective journal was kept to record “the reactive processes of interpreting” (Thorne et al., 1997, p.175) that occur during the research study. In addition to the above strategies, in order to further manage the pitfalls of “going native”, premature closure, and elite bias, descriptions or interpretations of the data was checked to ensure the presence of typical and atypical elements, early findings were set aside and re-examined later for alternatives, and finally, findings and conclusions were checked with the thesis committee.

Confirmability, the last criterion, is achieved when auditability, credibility and fittingness are established (Sandelowski, 1986). As strategies to address the other criteria of rigor were included in the method, this study achieved confirmability.
Ethical Considerations

Prior to commencement of the study, approval was obtained from the institution’s Research Ethics Board and the university’s Behavioural Research Ethics Board. As previously mentioned, potential participants were given the Information Letter (see Appendix B) and signed the Consent Form (see Appendix C). A key point in both documents was that participation was voluntary and that whether or not the individual participated; he would receive the same treatment from the program’s staff. As well, participants were told that they were at liberty to withdraw from the study at any time, could refuse to answer any question, and could have responses deleted from the tape or transcript of the interview. Although the risk/benefit ratio for this study was low, I would have referred the participant(s) for appropriate help had the interview(s) raised any disturbing issues.

To ensure participants’ privacy all identifying information was removed from the transcripts. Only myself as the investigator knew participant identities. Confidentiality was maintained by safeguarding the audiotapes, diskettes, and transcripts of the interviews. These materials were available only to my thesis committee and me, were stored in a locked cabinet and will be destroyed according to university regulations at the completion of the study. Also to maintain confidentiality, participants were assigned both a code number and pseudonyms. Code numbers were used during data analysis and pseudonyms used to present the findings.

Summary

In this study, the grounded theory was to gain an understanding of how middle-aged male cardiac patients initiate and sustain a heart-healthy lifestyle. The study is a first step towards determining what nursing can do to assist these patients in their efforts to change health behaviours.
Purposive sampling was used to select nine men engaged in lifestyle changes. Variation in sampling was achieved by selecting participants who had experienced different cardiac events, undergone different procedures and were at different stages in their lifestyle modification. Participants were recruited through a phase II cardiac rehabilitation program affiliated with a university teaching hospital. At the study site, the nursing staff in the rehabilitation program made the initial contact. Data were gathered through unstructured interviews during which participants were asked to describe their experiences.

The grounded theory method of constant comparative analysis was used to identify patterns, develop categories and descriptions, and to create theoretical links. Although data saturation was not reached in this study, I believe that I have produced useful conceptual categories from the data. In the next chapter, I present my findings, including the metaphor for the process that middle-aged men with CAD go through to initiate and sustain a heart-healthy lifestyle.
In this study I set out to examine how middle-aged men with heart disease, specifically CAD, initiate and sustain a heart healthy lifestyle. This age group interested me as they are in their productive years and ostensibly would be motivated to make changes in their lifestyles. Despite the plethora of scientific and lay information that lifestyle changes (i.e., dieting, increased exercise and smoking cessation) can have a positive impact on the course of the disease, CAD continues to be a leading cause of death in men. The men I talked to in this study acknowledged the importance of addressing risk factors and the need to make changes in their lifestyles. The men identified a process that they went through to engage in a change of health behaviour that culminates in a heart-healthy lifestyle. I have called this process “Connecting the Dots” as it seemed to capture the essence of what the participants described. In order to provide context for the findings that are reported and discussed here, this chapter begins with a brief description of the participants.

Description of the Participants

Nine men participated in this study, five married with children, one married with no children, two single, and one divorced. They ranged in age from 45 to 55; their occupations were diverse (e.g., architect, doctor, lawyer, movie producer, teacher, steward). All the participants had coronary artery disease but not all had experienced a heart attack, angina, or had undergone PCI or bypass surgery. Despite the presence of their disease, all the subjects seemed optimistic about the future and had positive attitudes about succeeding with lifestyle changes.
All participants were Caucasian and lived in the Lower Mainland, a large urban area located in the province of British Columbia, Canada. At the time of the interviews, four of them were working full-time, one half time, and one was looking for employment. Three men were on sick leave due to their CAD or other health reasons but intended to return to work. Those who were employed described their jobs as stressful but ones that they enjoyed.

The Dots

For the men in this study, initiating and sustaining a heart-healthy lifestyle was a complex process. It required integrating what one participant referred to as “dots”. In describing the process, Gary put it this way: “All that kind of stuff (receiving information and support) that, sort of, connect the dots in laymen’s terms and, uh, it actually gave me, it was such a great boost of encouragement to move forward and, like, carry on with it.” The three main areas or “dots” that needed to be connected were related to risk factors, seeking/negotiating support, and getting serious. Each of these areas or dots were the main categories that emerged in the analytic process. “Connecting the Dots” is a metaphor to describe and explain the basic social process of initiating and sustaining a heart-healthy lifestyle.

For these men to be successful with lifestyle changes, the dots had to come together as a whole. This entailed assimilating new and often startling information, gaining insight into their problem and disease, seeking/negotiating support, and facing certain truths that were previously unknown, ignored or denied. One such truth that was often denied is the status of one’s health. According to Sarafino (1997), when people do not see themselves as ill, they may be disinclined to devout the effort and sacrifice that a new health behaviour entails. As a result, whether or not a person engages in certain health behaviour depends on
motivational factors, especially in regard to the person's perception of a threat of a disease, the value in the behaviour reducing this threat, and the attractiveness of the new behaviour. Many health habits are acquired through learning processes, which occur by way of direct experience and observing the behaviour of others. When behaviour becomes well established, it tends to become habitual and hard to change. In addition, if the new behaviour is seen as one that is associated with something less pleasurable and inconvenient it may produce a state of conflict. For example, the need to change one's diet may seem unappealing and the introduction of an exercise regimen problematic if one has little time to exercise.

In addition, individual characteristics and existing health issues also play important roles in the success or failure of adopting new health behaviours. As a result, it takes considerable work to make it to "the end". Some of the men in this study managed to reach their goal with little difficulty, as they were able to overcome former habits such as smoking and inactivity, comprehend what it means to be afflicted with CAD, and see the benefits of adopting a wellness lifestyle. Others had a more difficult time reaching their goal, as they were unable to master certain aspects of the process such as a change in diet.

Middle-aged men with CAD face perplexing and life-threatening issues that relate to their disease. The information they receive from their physicians and other health care professionals about their new situation may be overwhelming and often presented at a time of crisis (e.g., following a heart attack or medical intervention). Upon hearing this information, men are expected, among other things such as adjusting to new medications and recovering from surgery, to address their risk factors. Connecting the dots was the equivalent
of making sense of all the information, accepting a new reality and then working out what
had to be done in order to achieve success.

Connecting the Dots

The discovery that one has CAD can be, for many men, an unexpected event. If a
middle-aged man has been symptom-free, the discovery that he is afflicted with heart disease
can be quite frightening. In order to initiate and sustain a heart-healthy lifestyle, men face a
variety of challenges, which include risk factor reduction. As both the health care community
and society, in general, tout risk factor reduction, changing one’s lifestyle becomes an
expectation rather than a choice. However, engaging in certain facets of risk factor reduction
was found by some participants to be difficult. Bruce reported that changing his diet was
something he struggled with. He put it this way: “It’s just not satisfying enough for me and I
have a hard time being a rabbit, eating rabbit food so it’s something I am slowly getting
into.” Like Bruce, Doug also had problems with his diet, although his problem related to
having too much of the wrong kind of food as opposed to not having enough of the right kind
of food. He described his difficulty this way:

Yes, it was difficult because of the situation I’m in, I’m working on ships, for ships,
and there’s lots of food but the food that the crew, the crew gets, they’re not the same
as the passengers, so everything is soaked in oil and it’s cheap, not as nutritious.

For some men connecting the dots was a conscious process of acknowledging the
existence of certain risk factors, gaining insight into their problem and the disease, and
putting into action behaviours that promote health and prevent future illness. For other men,
it was an unintentional process of learning that they were afflicted with CAD (i.e., having
angina or a heart attack) and facing the reality that lifestyle changes were necessary if they
were to avoid escalation of their disease.
The ease with which a man was able to get through the process of initiating and sustaining a heart-healthy lifestyle was based on many factors: (a) how he made sense of what was happening, (b) how well he understood his own risk factors, (c) what kind of support he sought or negotiated from family, friends, and health care professionals; (d) choosing to live (e) recognizing former behaviours, and (f) engaging in new behaviours. For the men in this study, embracing a heart-healthy lifestyle was a process that required (a) understanding risk factors, (b) seeking/negotiating support, and (c) getting serious. Although the process seemed progressive in nature, (i.e., one phase led to another), it became evident that a phase did not have to be completed or mastered before the next phase was begun. For example, a lack of support did not preclude engaging in risk factor reduction but the success or failure of sustaining the new health behaviour seemed to depend on the presence of support. From the data, the aforementioned categories were identified; the findings pertaining to those categories plus how each relates to the process of “Connecting the Dots” are described next. I include quotations from participants to elucidate meaning for each category.

Understanding Risk Factors

It became apparent from the participants’ narratives that understanding risk factors was a major issue in adopting a new lifestyle. Understanding risk factors appeared to involve gaining insight into CAD; specifically, that it is a chronic progressive disease with risk factors that contribute to the onset and escalation of the disease. It was also having knowledge that some risk factors are modifiable and some are not. The participants reported that knowledge was key to successfully understanding risk factors: knowledge of one’s own risk factors and of what one could do to mitigate their effects. Recognizing modifiable risk
factors and learning what could be done to address them helped the men prepare for a change in lifestyle. Two subcategories of understanding risk factors, which emerged from the data included: (a) making sense, and (b) confronting the disease. The findings related to each of these subcategories are described below.

Making sense. For the men in this study, understanding risk factors began with a need to make sense of what was happening with their health. Prior to learning they were afflicted with heart disease, many of the participants believed themselves to be in good health and were reportedly unaware that they were candidates for CAD. Some believed, in spite of evidence to the contrary such as elevated cholesterol, presence of angina or a heart attack, that CAD was not a health concern. John who was overweight and had elevated cholesterol did not consider himself a candidate for CAD. He explained it this way:

I did my cholesterol and it was really, really elevated and um, I was put on Lipitor. But for some odd crazy reason I decided in about ‘97 or ’98 to quit taking it which was stupid and I never sort of followed my cholesterol levels after that because I never really had any, um, signs or symptoms of angina except when I used to workout. I would get really short of breath but I just thought it was because I was overweight and not in shape like I used to be in rugby.

David, on the other hand, explained that because he was in such good physical shape CAD was the last thing on his mind. He said:

So I was always doing exercise and keeping myself in pretty good shape and then after that time, um, four years later I started to get some angina which I didn’t really even, you know, you’d think I would have been thinking about that but I was totally in denial.

And Michael, who had a heart attack, believed he was too young to have the disease. He put it this way, “A 37 year old with two young kids, somebody had just told you you’ve had a heart attack, you’ve had a heart attack and (laughing) nah, I don’t think that’s, that can’t be happening.” These men believed their symptoms were a result of something other than
cardiac disease as they had looked after themselves (i.e., regularly exercised), only had a weight problem, or were too young to have heart disease. Another participant equated his belief that he was clear of disease with the negative results of a stress test. Allan said, “I still never had any angina and so I thought that I had a guarantee from the cardiac stress test which I had in 1997 which proved no focal stenosis.” Although Allan had experienced some pain in his chest, the decision to have the stress test was not made on his own instead it was made on the advice of a brother.

Of the nine participants, only three believed that they might be at risk for heart disease. Of those, two took steps to verify the presence of CAD by seeking a medical opinion. The third participant continued to deny the disease even when he was experiencing angina. He said, “I mean I’d known the symptoms of impending heart attack and stuff but this certainly didn’t feel like that, I didn’t even dream I had heart problems.”

The perception that one is in good health seemed to lead to the belief of being exempt from future risk. It was evident that for some participants their lack of symptoms was reason enough for not assessing themselves for risk factors or failing to equate things such as a stressful job, family history, or increased cholesterol with heart disease. One participant reported that his wife was the reason he had his cholesterol checked. He explained, “…my wife nagged me into it”. Despite a family history of CAD and a suspicion that he might have high cholesterol he saw no reason to have it checked.

One participant who had initiated a heart-healthy lifestyle explained that there must be some insight into one’s health status and some level of acceptance that addressing modifiable risk factors can slow the development of the disease. Gary said, “that’s not going to be me and if it is me I’m going to find out now and I want to do something about it, that’s
my path.” For Gary, addressing risk factors was a must as he had young children and did not want to die suddenly like his father. For a man, being willing to accept that he is afflicted with CAD may symbolize the end of former pleasures and, to some extent, youth. Acceptance has to do with the need for a ‘reality check’ and find out more about his actual health status. This may mean acknowledging that he is a candidate for CAD, and making sense of that information helps a man to realize that something can be done to slow its development. In this way, men may rationalize being afflicted with CAD is not the end of the world. It is just something to deal with and keep living. By accurately perceiving one’s health status and making sense of what is happening a man may prepare for his future, as David put it, “That’s right and sort of right now for me like I said I just look at it as like everything I do is basically to survive longer.”

With a clear understanding of his health status, a man will be better able to focus on the modifiable risk factors that apply specifically to him be it stress, obesity, or a need to increase exercise. As Bruce stated, when he became aware of his disease and risk factors, “…I spend most of the time doing that (exercise) more than anything else and keeping the weight down and keeping the cholesterol down, are three of the things that I am working on the most.” For Bruce, losing weight was important as he viewed weight loss as an indication of success in his attempt to control CAD.

All of the men I talked with eventually made sense of what was happening to them and changed their perception of their health. They came to understand that they had CAD and that it necessitated recognizing one’s risk factors and taking action to address them. They all appreciated that they were at risk for further episodes (e.g., another heart attack or an intervention such as PCI) if they failed to modify their lifestyles. This fact was very evident
to many of the participants, as they had experienced first hand the failure to address risk
factors. For these men it took a second event to make them seriously look at their risk factors
and undertake a change in health behaviour as David explained:

Well, the first time I was in hospital, going back to 98, one of the outreach nurses that
dealt with cardiac patients at Lions Gate had told me that there was some courses you
could take and I went, oh, ya, ya, ya, okay and didn’t really think anything of it. And
then when I was back in hospital later, I was like, okay, time to get serious about this
and so that’s when I phoned her back ... and I got in touch with them and arranged to
take the course (stress management) through that.

Confronting the disease. Middle-aged men often believe that life-threatening
diseases will not happen to them; that they are invincible. Many middle-aged men have
young families, are still building their careers and are beginning to enjoy the “fruits of their
labour”. Despite the presence of symptoms the men in this study were not ready initially to
accept the existence of the disease. Even when it became very apparent that they were
experiencing heart problems, some of the men dismissed the possibility of having heart
disease. For example, Allan who experienced a heart attack alone at home called his
neighbour for assistance. Explaining his behaviour, he said:

And I um, the symptoms were really acute, I was sweating profusely, and I was
nauseated, and I was passing out, no one was home, it was about ten o’clock on a
Saturday evening and I didn’t know what it was but I knew it was something serious.
So I called my next-door neighbour and I said can you give me a lift to the hospital,
because by this time I thought I ought to go to the hospital, because the symptoms
were not receding.

Another participant, Michael, who had angina all day, did not equate it with heart disease. He
put it this way:

We went out to the neighbours for dinner and so on but this discomfort was there all
the time and then about two o’clock in the morning when I couldn’t sleep, I’d been
tossing and turning for awhile and I said to my wife, something’s wrong here, I’d be
more comfortable getting myself to the hospital. So I drove myself (laughing) to the,
from, from Glacier Washington to Abbotsford, to Abbotsford Hospital.
Michael’s behaviour was similar to that of Jack who also had difficulty accepting his chest pain as angina, he said:

We get halfway home to our house and by this time I sort of knew something was wrong and I was starting to have real chest problems and the pain in my throat intensified... I still didn’t quite figure out that it was heart problems yet... I was having trouble breathing and what not and I said, Jen, something is seriously wrong, you’ve got to get me to the hospital. So we didn’t actually call an ambulance, she drove me to the hospital, which was crazy, so I walked into the hospital.

For each man, understanding risk factors involved confronting or accepting the fact he had CAD and then gaining insight into that disease. Confronting the disease also included examining what he had to live for and how he chose to live. Jack explained it this way, “I mean I want to live, I have lots of stuff I want to do still in this life.” Part of confronting the disease also involved receiving well-timed information that was salient, meaningful and applicable.

Personal beliefs and past experience define and influence how people think and therefore their actions; especially with regard to when and how they will address risk factors. Personal experience also influences how a person comes to know and how he/she will deal with being diagnosed with a chronic progressive disease. In this study, past experiences with CAD also influenced confronting the disease. For one participant it was the death of his father at 63 years of age as a result of a heart attack that influenced his decision to confront the disease. As Gary put it, “I felt I was in a higher risk group because my father died young and his father died relatively young so I went and had a CAT scan.”

When confronting the disease, the men learned about CAD and about themselves, bringing to the forefront their feelings about having a chronic progressive illness, and about having to take medicine, and undergo treatment. Confronting the disease was highly individual and unique for each man. As Gary put it: “I need proof that I don’t have it.”
Another participant, Michael explained, “I guess I have a hard time, being a relatively healthy person, I don’t know, you know, what would change before and after another PCI.”

The above findings suggest to me that if a man understands his risk factors, has an accurate perception of his health status and accepts the existence of CAD, he can begin to connect some of the dots because he knows what he has, what to expect and can more easily see what needs to be done to control his disease. In this way, he has already considered the potential effects of addressing risk factors and what he hopes to achieve. If a man does not understand what his risk factors are, he can make inappropriate decisions and be doomed to suffer recurring episodes of angina, heart attacks or even the ultimate fate, death.

**Seeking/Negotiating Support**

Support emerged from the data as a significant feature in the process of engaging in a heart-healthy lifestyle. The presence of support appeared to be instrumental in the success or failure of their attempts to change their lifestyles. The men in this study sought or negotiated various types of support from a variety of people. Most of the men interviewed had experienced support in some form that made a difference to how they managed their lifestyle changes. The support these men sought was either formal, such as from healthcare professionals or programs, or informal, such as from family or friends. Information obtained through programs helped these men to develop a better understanding of risk factors, adding to their knowledge, or revising it according to what they learned. Information that the men received included ways to handle stress, facts about diet and exercise and feedback on physical health. David related his experience with seeking information in this way:

I took a course through a woman by the name of Gina, who’s in Vancouver and it was at the Tzu Chi Centre at that time, …it was a wonderful course and it just made me realize like where I was, sort of, I was like seven to ten all the time, like I never got below seven on a scale of one to ten, I was like seven to ten and just
kind of rotating around inside that and now, I do meditation.... I just wanted you
to know that it really helped me to keep my whole internal sort of pressure a
whole lot lower than it was before.

By attending the cardiac rehabilitation program, Bruce received new information that helped
him to improve his exercise regimen. He explained it this way:

This (program) is really helping me a lot, I am learning quite a bit here about diet and
exercise, a lot about exercise even though I have done lots of exercise in the past. I
learn something every time I come down here about ways to exercise better, more
effectively.

Information provided by the cardiac rehabilitation program also helped to increase Barry’s
knowledge. He learned that he was able to exert himself more than he thought. He said:

And where the Healthy Heart has helped me realize is I can do that (walk the golf
course) without damaging anything because I think there was a little bit of, uh,
trepidation about it, you know, after the, after my surgery thinking is it too soon for
me to start walking.

Formal cardiac rehabilitation programs seemed to afford the participants many different
aspects of support. The first aspect was supervision, which allowed participants to gradually
increase their exercise knowing that they were being observed for any untoward affects. The
presence of healthcare personnel and monitoring equipment made the program’s facility a
safe place to begin rehabilitation, as David put it:

I was always in the gym, but it was nice to go there (the program) and have a safe
place to exercise when you first, sort of, get back up on your feet and knowing that
you’re being monitored and that you’re not going to do yourself any damage and that
it was a safe secure place.

Barry also remarked about the safety aspect of working out at a cardiac rehabilitation
program. He offered the following comment, “and you go to Healthy Heart and you have,
you feel safe working in that environment.” The second was motivation; the program
provided incentive to not only begin the process of rehabilitation but also continue in it. As
Doug put it, “I think it’s great, a great program, you know to just have supervision especially,
and the types of personality that need (laughing) need a kick start.” Allan explained it this way, “if I weren’t in the Healthy Heart Program, I would most of the mornings roll over in bed and go back to sleep but I haven’t missed even one day.” The third was group support, while at the program study participants could talk with other men who shared similar problems. As Doug commented, “everyone is an individual, you know, you go at your own pace but, just to have a bit of support sometimes is, you know, chat with each other or whatever, compare so that probably is important.” The fourth was positive feedback and encouragement. As Gary reported that the words of encouragement that he received from a nurse in the program helped to relieve his anxiety about the possibility of a premature death. He explained it this way:

You’re doing a good thing, you’re on the right track, you’re going to help yourself. You’re going to live longer, keep it, keep it up, right? And you know, I, actually came home, that’s the first time I actually came home and felt relieved.

A fifth aspect was the structure the cardiac rehabilitation program provided. Having to attend the scheduled exercise classes was what some men preferred and others needed. Doug put it this way, “I like it (structure), I like having a schedule as I say, I just discovered I like exercising first thing in the morning, it’s really good.” Another man, Michael, said:

I’d been thinking for awhile, you know, what I’m doing here to manage my weight in particular just isn’t working, I need something else, I’m just not getting to the gym the way I should be. I need something to keep this front and centre in my mind. So I actually took it upon myself to, to register in the Healthy Heart Program.

Whereas most men found the support of the cardiac rehabilitation program very helpful and encouraging, one participant did not. As he was a physician, he believed that the program could not offer him anything that he could not do for himself. Rather than attending
the program, he negotiated for support that he considered more appropriate for his situation. He explained it this way:

Being a doctor and a guy, I just kinda blew it all off. I know what I am doing, don’t tell me what to eat. I don’t want to eat stir-fries, quit talking to me about stir-fries and vegetarian chili and I’ll do what I want and you know, they advised me to go to their program and I said I am not going to go to a gym and walk around with a bunch of old guys and I can do it on my own I used to be a good athlete and all that. (John)

Informal support such as that from family and friends was also found to be very important. The men benefited from having a spouse, significant other, or even a friend who supported their efforts to diet and exercise. David spoke of his wife’s support this way, “Yeah, she’s been really supportive and really there just sort of helping me with like food decisions and sort of educating me on food.” Bruce talked about how much support he received from his family:

First of all everybody in our family is always looking at diet, we’ve all had success with diet, we’ve all, we all exercise and push each other, we don’t just say hey, you know you should go, it’s okay come on with me, get your clothes on, you know, get your shoes on, let’s go to the gym right now.

Most of the men were fortunate enough to have family or friends who provided support. Two men, however, were not. Of the two men, one (John) had no family and few supportive friends. When asked about support, he remarked that his support came largely from himself and his doctors. He reported that his doctors were very supportive and provided reinforcement in the form of praise for improvements in his lipid profile and his weight loss. As for his internal support, he explained it this way, “I am very disciplined when I want to do something, I do it....I like to do things on my own, exercise on my own. I don’t even like working out with my friends or even going for a run with friends.” The other man (Allan) although he had family, did not seek support at home for diet and exercise. He commented that he had to do it all himself. Like John, he was also disciplined and put it this way: “When
you come to the dinner table and there is three cakes and rice and potatoes and third helpings, it’s not really that beneficial, but you have only yourself to, you can’t rely on other people.”

It was apparent that support made connecting the dots easier as others were there to provide motivation and guidance. The knowledge that there were others who could help made the transition to a new lifestyle more manageable. Because of their support these men believed that success was within their grasp.

Getting Serious

Getting serious involved undertaking a change in lifestyle where unhealthy habits and activities were replaced with healthier, more appropriate pursuits. David put it this way: “...once I’d been back in the hospital, like two years ago now, then got real serious and just started cutting out everything and that’s the way we’ve been dealing with it.”

The participants reported that changing habits that were well established took a great deal of effort and, as a result, lifestyle changes were not always easy or possible to make. Understanding one’s risk factors and support played important roles in this facet of connecting the dots as they helped to facilitate or impede the process. However, it seemed that with a desire to live longer and proof that one was on the right track to a better life, embarking upon risk factor reduction was less onerous. Getting serious involved three elements: (a) choosing life, (b) recognizing former behaviours, and (c) doing well. These three elements are described next.

Choosing Life. The desire to live a long healthy life is only natural. Since no one knows for sure what lies ahead, we all live with a degree of uncertainty. For example, most people cannot say with certainty that they will live a long time, never have an accident, or never acquire a chronic illness. But when faced with a high-mortality chronic illness such as
CAD, the uncertainty regarding death and disability becomes more real and urgent. All of the men interviewed did, to some extent, talk about survival or having a good quality of life. Choosing life occurred with the diagnosis of CAD and an increased understanding of what it meant to be afflicted with this disease. Some men expressed the view that the reason they were attending to their risk factors was to live longer. Barry explained it this way:

Just to live. My long term goal is to try to live a healthy life so I would like to live to, uh, eighty years old if I could, I could and, uh, and have a pretty normal life, that's all you know, that's all I'm going to ask for.

For Gary, choosing life was important as he had young children and wanted to be around for them. He described his desire to live longer this way:

Diet, and exercise, you know, you've just added ten years to your life. So I thought well, I must be doing great but it was nagging, you know, it was just, you know, I don't want to be sixty-three and (snaps fingers) and go like my dad did, I've got young kids.

Allan's perspective was different. He chose life simply because he was not ready to die. He said, "I didn't have any damage to my heart muscle to speak of but if I have a heart attack to my LAD, then I am toast. So I had better do something about it, hadn't I?" David explained that looking after himself was now a priority, as he wanted to survive. He explained in this manner: "I had always looked after myself but now's it's like that's part of my job (laughing) it's like survival now.... Like I said I just look at it as like everything I do is basically to survive longer."

For other men, choosing life meant being able to live a better quality of life. Doug said, "I mean just to try and keep as healthy as possible," and Bruce put it this way:

Hoping that that doesn't happen (another heart attack) but I guess at this point I can only hope, I hope the next one just drops me dead instead of, you know, but I hope it's, you know, years down the road and it drops me dead instead of; because the next one is probably going to be massive congestive heart failure that it will probably cause and that will lead to a real slow deterioration, I don't want that to happen."
In choosing life, some men described various catalysts or triggers that caused some of them to face the reality of the disease and the need to address their risk factors. The fear of having a major cardiac event shocked some of the men into action. Allan described his catalyst as being told, “You would be considered to have a moderate plaque burden and be at a relatively high risk for a specific coronary vascular event in the next two to five years.” Barry explained his in this manner: “The last thing I want to do is have a heart attack.” and in Jack’s case it was knowledge of the event (his heart attack and subsequent angiogram). For John, his trigger was fear of having open-heart surgery. He described it this way:

What scared me the most was lying in the CCU, knowing that they were going to do an angiogram on me the next day, and I knew for sure that there was something going on and I said if they can’t stent it, I would just, I don’t want open heart surgery...I just didn’t want open heart surgery so that’s what really changed my.

Recognizing former behaviours. The findings suggest that men do not adopt new health behaviours until they recognize that former behaviours are contributing to their illness. Once the men realized that new health behaviours would help resolve their health problems then engaging in risk factor reduction seemed a less daunting challenge. Recognizing former behaviours included having knowledge about their illness and the effect that behaviours can have on that illness. Part of recognizing former behaviours involved self-examination, making an honest assessment of one’s lifestyle and admitting that there was a need for change. Allan said, “So it didn’t occur to me that if I persisted in this behaviour (four to eight croissants a week) then I would...didn’t occur to me that little by little I was just damaging myself.”

It seems from the participants’ accounts that they got serious when they learned about the effects that risk factors have on the course of CAD and about themselves, bringing to the front their ability to initiate and sustain a lifestyle change. This ability was highly individual,
such as in the ability to quit smoking. Although none of the men smoked at the time of the interviews, many had a history of smoking. For some men, smoking cessation was accomplished on the first try while for others numerous attempts were needed to finally ‘kick the habit’.

Positive experiences with the medical profession also influenced recognizing and changing former behaviours. For example, one participant did not have family doctor at the time of his first PCI and consequently did little to change his health behaviour. As John put it, “I think now that I have such a good GP, that made a huge difference, see I didn’t have a GP the first time and now, she’s on top of me.” Allan, another participant, said that talking with a doctor after his heart attack made him aware of his sedentary lifestyle, “the doctor asked me...what was your activity level? And I thought and I thought well zero.... And my diet was bad.” These men felt lucky, as they had concerned, wellness-conscious physicians overseeing their care. This suggests to me that if a man is fortunate enough to have exceptional physician looking after him then recognizing problem behaviours can be a joint effort.

Some of the men I interviewed were not so lucky with the medical profession. Gary tried several times to obtain validation for his quest to address risk factors but was thwarted by doctors more concerned with illness than wellness. He put it this way, “I said I’ve been proactive here, I’ve gotten ahead of the curve...I’ve dropped my cholesterol and done all these things and this doctor basically blew me off.” Another participant spoke of his experience after his hospitalization:

They (health professionals at the hospital) were not; they didn’t actually do anything to help me on the way after I got out of hospital I found. I’m finding everything myself. I think if it wasn’t for my wife and my brother-in-law, I probably would still just sort of, be getting by on whatever I could determine.
Doing well. All the participants reported that seeing positive results provided encouragement for sustaining their new lifestyles. These results included weight loss, improvement in one’s lipid profile, and a general sense of feeling stronger and healthier. Participants spoke of the struggles encountered adjusting to their new lifestyles but most felt that the results justified the sacrifices that they were making (i.e., giving up favourite foods). They also spoke of their accomplishments. Allan said, “my diet has improved quite dramatically, my exercise has improved dramatically. But I should be proud of that and I am...”. Jack described his feelings about giving up cigarettes: “Yah, two weeks ago, two weeks today and I’m doing really well and I’m not going back, I’ve quit three times in the past...but it’s really hard to quit.”

Doing well also gave rise to the feeling that one could do more. Most men believed they could do more than they were doing at the time of the interviews. Examples of comments that reflect this belief are:

- “I know that I can still do more but, you know what’s causing me to do a bit more well...it’s increased from three times a week to five times a week which is pretty dramatic, for someone who has been a slug for 20 years.”
- “I think I am eating better but I can still improve on it, still more”
- “I am going to exercise...I’ve never been a morning person but doing this morning class I actually love exercising in the morning. I feel great and so I’m going to...ride my bike up there (to the community centre) and exercise for an hour and come back.”

Getting serious represented the last aspect in the process of connecting the dots. It indicated that men were committed to addressing their risk factors. With a foundation of knowledge and support, they were able to see what needed to be done and took action.
Moreover, with the positive reinforcement that doing well provided, they were confident that the decision to initiate and sustain a heart-healthy lifestyle was the correct one. When the men were unable to connect the dots they floundered, failing to address the very things that are important in the control of their disease. These men eventually connected the dots but often it came at the expense of their heart health.

**Summary of the Findings**

Understanding one’s risk factors, the first phase in connecting the dots, helped men to come to terms with their disease. Armed with insight into their risk factors and knowledge that CAD is a high-mortality, chronic, progressive disease, men in this study had a better idea of what to expect and what to do. Understanding one’s risk factors encompassed two elements: making sense and confronting the disease. Making sense entailed having an accurate perception of one’s health. It was seeing one’s health for what it really was and not ignoring or denying symptoms when they appeared. By confronting the disease, men accepted that they had a chronic disease and that they were at risk for life-threatening events. Some men readily accepted their problem and formulated a plan, which lead them to the next stage.

Without understanding one’s risk factors, men approached the disease unsure of what to expect, and how to interpret the information they received. These men did not have a plan and struggled to come to terms with the disease, believing it was not really happening to them. They failed to make the necessary changes to their lifestyles and as a result suffered further cardiac events.

Seeking/negotiating support as they connected the dots provided the men, in this study, with help to initiate and sustain a heart-healthy lifestyle. This guidance assisted the
men to figure out the best way to succeed in their endeavours to change their lifestyles.
Support equipped the men with the knowledge that others have similar problems and that they are not alone in their efforts to address risk factors. The men received support in the form of motivation, structure, positive feedback, and supervision from healthcare professionals and programs. Seeking/negotiating support from family and friends not only helped the men initiate their new health behaviours but also sustain them for the long term.

Without external support such as family and friends, some men had to rely upon themselves or negotiate other appropriate support to initiate and sustain a lifestyle change. To achieve success, these men had to be highly disciplined and able to persevere despite distractions and the unsupportive actions of others.

Getting serious involved engaging in risk factor reduction and replacing unhealthy behaviours with healthy ones. Although this facet of connecting the dots included: choosing life, recognizing former behaviours and doing well, it is also based on understanding risk factors and seeking/negotiating support. Getting serious about changing one’s lifestyle was easier when the men understood their risk factors and had support.

Choosing life was having the desire to survive or live a better quality of life. It started with experiencing some event that triggered a realization that something must change. By recognizing former behaviours, these men could move forward and establish new habits that would improve their lives. Doing well gave the men encouragement or a reason to sustain their heart-healthy lifestyle.

In this chapter, I have presented ‘Connecting the Dots’ as the basic social process by which men initiate and sustain a heart-healthy lifestyle. This process involved understanding risk factors, seeking/negotiating support, and getting serious (see Figure 1). I have discussed
each of these categories as it relates to the other categories and the overall metaphor. I have used the men's own words to describe their situations, and the categories generated reflect the men's experiences. In the final chapter, I discuss the findings in terms of related literature, and implications for nursing practice, patient education, policy, and research.
Figure 4:1. Relationship of categories in Connecting the Dots

UNDERSTANDING RISK FACTORS:
- perceiving one’s health
- confronting the disease

HAVING SUPPORT

GETTING SERIOUS:
- choosing life
- recognizing former behaviours
- doing well

INITIATING AND SUSTAINING A HEART HEALTHY LIFESTYLE
CHAPTER FIVE

Discussion and Implications

This study used a grounded theory approach to explain how middle-aged men with CAD initiate and sustain a heart-healthy lifestyle. Nine participants were interviewed to determine the processes that men go through in response to a need to engage in lifestyle modification. Constant comparative analysis of the data revealed a process of “Connecting the Dots”, comprising three major categories: (a) understanding risk factors, (b) seeking/negotiating support, and (c) getting serious. Understanding risk factors was found to have two elements: making sense and confronting the disease. Getting serious was comprised of three elements: choosing life, recognizing former behaviours, and doing well. Although the process seemed to be progressive in nature, each part of the process was somewhat dependent on the other. For example, seeking/negotiating support helped the participants to better understand their risk factors and get serious about changing their health behaviours. In addition, the knowledge acquired in understanding risk factors helped facilitate getting serious.

Findings from this study suggest that for middle-aged men with CAD, the process of initiating and sustaining a heart-healthy lifestyle was akin to connecting the dots. The men described connecting the dots as understanding one’s risk factors, seeking/negotiating support, and getting serious. From poorly understanding their risk factors and the implications of having CAD, the men came to understand their risks factors by making sense of what was happening and accepting that they had CAD. Seeking/negotiating support was important as it made connecting the dots an easier experience. Getting serious entailed engaging in risk factor reduction because life had value, former behaviours were recognized
as deleterious and new behaviours produced positive results. These processes were progressive in nature but at same time interwoven. Both understanding one’s risk factors and getting serious about lifestyle modification were facilitated by support. Knowledge about their disease, specifically the consequences of their risk factors and support, equipped the men to make informed decisions, or to work out what they needed and determine the appropriate course of action.

Prior to discussing the implications for nursing practice, patient education, policy, and research, it is necessary to discuss two issues relating to the sample that affect the rigor in this study. The first issue is the homogeneity of the sample and the second is the sample size.

**Rigor in This Study**

When using a grounded theory approach, Morse and Field (1995) state, “There must be an adequate range of participants to provide a full range of variations in the phenomenon so that definitions and meanings are grounded in the data.” (p. 157). To select the sample for this study I used a nonprobability strategy, purposive sampling. Although this strategy allows the investigator to select subjects considered to be typical of the population to be studied it also can result in an overrepresentation or underrepresentation of the population. That being said, the sample of men in this study was limited to white, middle-class, university educated, and employed. To some extent, this overrepresentation of these elements of the population was not unexpected as statistically, Caucasian men represent the largest number of men with CAD. Moreover, factors such as education and financial resources influence the ability to participate in research studies. Those with resources are able to make themselves available whereas individuals from lower socio-economic brackets may have family or employment
responsibilities that limit their accessibility. Although this sample was homogeneous in certain demographic variables, it was diverse in terms of age, marital status, employment, co-morbidities, cardiac events experienced, level of knowledge about CAD, and type and number of interventions.

Because the number and demographic characteristics of the men who volunteered limited sample selection, I was unable to obtain subjects of different ethnic and financial backgrounds. This lack of diversity threatens the fittingness of the study. I had hoped to secure a more diverse group of men as differences in sociocultural practices influence lifestyle and perception of illness. Sarafino (1997) reports that individuals from lower income groups have poorer health habits and attitudes than those of higher income groups. They tend to smoke more, exercise less, and have less knowledge about risk factors for disease. Interviews with these individuals may have elicited more categories about their experience with CAD, risk factors, and the need for lifestyle changes.

Although my sample was not as diverse as I wanted, the emerging theory did not reflect the varied socio-demographic backgrounds of the men in the study. I consciously looked for ways that issues of difference may have influenced their experience with heart disease and lifestyle changes, and variations were apparent. For example, one participant was able to afford an expensive diagnostic procedure in his attempt to determine the presence of CAD. However, with regard to how the men initiated and sustained a heart-healthy lifestyle, the process that they went through was similar. Despite their various personal situations, the findings are similar for all participants. This reinforces Glaser’s (1978) contention that it is impossible to determine in advance which variables will be important in developing the theory.
Also of concern is the possibility that the small number of interviews that make up the data of this study may have been insufficient to elicit all the behaviours that men display while initiating and sustaining a heart-healthy lifestyle. This limitation, plus the homogeneity of the sample suggest that this study most appropriately provides tentative elements of a theory of how middle-aged male Caucasian cardiac patients initiate and sustain a heart-healthy lifestyle.

Understanding one’s risk factors by making sense of one’s health status and confronting CAD, seeking/negotiating support, and getting serious by choosing life, recognizing former behaviours, and doing well were key findings of this research. These were elements of the process that men went through to initiate and sustain a heart-healthy lifestyle. I now examine related literature for similar findings of other researchers.

**Related Literature**

The findings of this study are in accordance with previous studies, which demonstrated that the perception of health influences risk factor reduction. For example, in Wichowski and Kubsch’s (1997) study of the relationship of self-perception of illness to compliance behaviours, the researchers found that self-perception of health/illness of a person with a chronic illness has a significant bearing on the person’s compliance level. As patients who do not perceive themselves as ill often do not comply with their treatment regimens, the authors concluded that self-perceptions must be addressed in order to achieve compliance with treatment and lifestyle changes. These findings are similar to mine in that an accurate perception of health enabled the men to begin changes in their lifestyle. Also, in another study, Meischke et al. (2000) reported that perceived general health was an important factor in determining personal risk for a heart attack. They found that those who reported
good general health had a lower perception of risk of a heart attack. They found that those individuals who reported good health also reported one or more risk factors. The findings from this study are also consistent with findings from the present study, which further the notion that the presence of risk factors does not ensure that men or others will take action to adopt preventative health behaviours.

Other studies also support the view that confronting the disease is important. Zerwic, King, and Wlasowicz (1997) conducted a study to examine the perceptions of patients with CAD about the causes of CAD. This study found that despite general knowledge about CAD, individuals with known risk factors were largely ignorant of their personal risks and to some extent of the course of the disease. The authors suggest, "identification of the role of risk factors as potential contributors to the development of CAD is an important first step in initiating modification of risk factors" (p.98). The subjects in Kärner, Göransson, and Bergdahl's study (2003) were found to have a substantial variation in understanding about their disease one year after a coronary event despite information they received. The authors suggested that some patients might require a deep knowledge of the disease to understand its cause and treatment, while others do not have such needs in order to handle the situation. It is possible that having an awareness of one's risk factors and an adequate understanding of one's disease helps people to feel more in control of their experience. Knowledge and a sense of control may also increase likelihood of initiating and sustaining a heart-healthy lifestyle.

Alm-Roijer, Stagmo, Udén, and Erhardt (2004) suggested that patients' compliance to lifestyle changes correlates to knowledge of risk factors for CAD. The authors posit that a higher degree of knowledge about risk factors for CAD is a factor contributing to better compliance with lifestyle modification. This conclusion is congruent with the finding that
men initiate and sustain a heart-healthy lifestyle by first increasing their knowledge of risk factors and CAD.

The findings of this study revealed that support, whether it was sought or negotiated from healthcare professionals, family, or friends, was an important element in addressing risk factors. Certain aspects of support were identified as being extremely helpful when attempting to make health behaviour changes. These findings are consistent with the studies of Boutin-Foster (2005) and Bergman and Berterö (2001). Boutin-Foster reported that support could promote risk factor modification and ultimately contribute to improving CAD outcomes. As in this study, the author found that certain activities of one’s support network made it easier and practical to engage in healthy behaviours. In the study conducted by Bergman and Berterö (2001), social support was identified as a prerequisite for successful rehabilitation.

The men in this study took responsibility for themselves in seeking information and support (i.e., enrolled in a cardiac rehabilitation program) in their attempts to improve their situation. This might indicate that these men have an internal locus of control (Sarafino, 1998). That is, they might believe that an action or an outcome is contingent on their own behaviour. Moreover, participation in the cardiac rehabilitation program may have served to further internalize their locus of control. For example, information and feedback provided by the program may have helped to increased or develop their belief that the control over their successes or failures lies within themselves.

Having an internal locus of control may account for their getting serious about their risk factors. It is possible that the men who seemed to have an internal locus of control were feeling more in control of their disease and consequently were able to initiate and sustain a
heart-healthy lifestyle. Younger, Marsh, and Grap (1995), in their study of the relationships among participation in outpatient rehabilitation, health locus of control, and mastery of stress with CAD, reported that internal locus of control was strongly related to change. This may help explain why these men initiated a change in health behaviour and the effects of the rehabilitation program such as increased knowledge and positive reinforcement may help explain why they sustained the change. Sundin et al. (2003) suggest that patients who participate in multifactorial cardiac rehabilitation show higher internal locus of control.

By understanding risk factors, seeking/negotiating support, and getting serious, men in this study initiated and sustained a heart-healthy lifestyle. When they had knowledge about their risk factors and the implications of those risk factors, support for a new health behaviour, and determination they were better able to succeed with a new lifestyle. These findings are consistent with Gulanick, Bliley, Perino, and Keough (1998) who report that both men and women need adequate information and support to enable them to undergo lifestyle changes.

Although these findings are not new or controversial, they underline the need for wholeness before men can engage in heart-healthy lifestyles. That is, for men to succeed they must have sufficient knowledge of risk factors, seek out or negotiate appropriate support and get serious about changing health behaviours. These findings suggest a need for individualized treatment plans for long-term lifestyle management. For example, recognizing men as experts of their own lives, having men define their own needs, and facilitating conditions for men to achieve success in their attempts to change health behaviours. Findings from this study have implications for nurses and other health care professionals who work with middle-aged men who have CAD.
Implications for Nursing Practice

Although nursing research is needed to determine what interventions or strategies are most effective in helping men initiate and sustain a heart-healthy lifestyle, the findings from this study enable me to suggest possible strategies. Because support is a key element in the process of initiating and sustaining a heart-healthy lifestyle, nurses can play a role in supporting men through the process. It is clear from this study that undertaking a change in health behaviour is a difficult task. Nurses are in a prime position to provide both emotional and instrumental support to men. As the narratives of the men in this study indicate, recognition of their efforts was a powerful motivator, a practice that nurses should expand. Nurses could employ a strategy of follow-up telephone calls after cardiac rehabilitation to provide emotional support to men at home. This intervention could provide patients with encouragement to continue in their new health behaviours. Knowing that someone cares enough about their progress to telephone may be all that is needed to ensure sustainability of the new behaviour. Nurses can also ask patients and their families and friends about the types of instrumental support patients may require after hospitalization as well as the availability of social networks that can provide these services. Nurses can counsel the members of the patient’s social networks on ways they can facilitate lifestyle modification. Moreover, nurses can also ask their patients how they can provide additional instrumental support to them -- for example, by problem-solving exercise and diet problems. Support for men must also recognize and respect issues of diversity. For example, support for men of different ethnic origins must be culturally appropriate.

By listening to men and validating their experiences, nurse can help men connect the dots. Nurses can also link men with other men who are having similar problems. Nurses must
be aware that support from other men with similar experiences is a vital part of making sense of the need for lifestyle modification. Others words and experiences can be a help when men are having problems with risk behaviours. Hildingh and Fridlund (2004) suggested that peer support groups foster a spirit of community that allows participants to share the experience of having a similar disease. This feeling of community facilitates discussion that may help men incorporate new knowledge in an enjoyable way.

**Implications for Patient Education**

As mentioned in the report on the findings, knowledge is instrumental in risk factor reduction. To be successful with lifestyle changes, men with CAD require information about their disease, as do their family and friends. There is a strong need for information/teaching about the aetiology of their disease, the associated risk factors, and the importance and possibility of affecting the course of the disease. Nurses can act as adjuncts to prepared educational materials, explaining the contents in such a manner that men, family members, and friends come to realize that relapse or progression can be prevented or mitigated. Nurses could also develop educational seminars that focus on the needs of men rather than on what healthcare professionals believe they need. As men with CAD come from a variety of backgrounds, educational programmes need to focus on the learner rather than on the teacher and teaching methods. For example, the nurse could use real-life scenarios to illustrate a topic that then becomes open to discussion. Nurses must also acknowledge that some men require individualized programmes, as they are unable to attend or choose not to attend an organized rehabilitation program. In this situation, nurses could collaborate with the individual on the development of a program that would meet their unique needs.
Nurses must also support other nurses in their efforts to bring optimal care to patients. Nurses with advanced academic and clinical knowledge in cardiovascular health and rehabilitation need to share their experience with nurses new to the field. With their expertise they can help nurses identify strategies to help men begin their journey to a heart-healthy lifestyle. Less experienced nurses are often the ones providing bedside care to postoperative patients and as such are key players in the provision of information. Experienced nurses can help junior nurses gain the knowledge and skill to guide and support patients as they attempt to connect the dots.

**Implications for Policy**

This study supports the implementation of a proactive model of care where a multidisciplinary team empowers patients to manage their health and health care. In this model of care, informed patients take an active part in the care that they receive. Nurses and other healthcare professionals work with patients to define problems, set priorities, establish goals, create treatment plans, and solve problems. One such model is the Chronic Care Model (Improving Chronic Illness Care, 2004), which acknowledges the patient’s central role in their care, (care that fosters a sense of responsibility for their own health), and provides effective self-management support. Implementation of this model of care would ensure that patients received follow-up, individualized treatment plans, information, support, access to community resources, and strategies for living with CAD. A proactive model of care could include not only nurses who work in rehabilitation programs but also nurses who work in other areas of cardiac care.
Implications for Nursing Research

The findings of this research raise other research questions, in addition to the one about effectiveness of nursing interventions. The unique characteristics of the group of men in this study have influenced the findings in a distinctive way. We have to learn about how men of different ethnic groups and socio-economic status initiate and sustain a heart-healthy lifestyle. The way in which they go about changing health behaviours may or may not be different from the participants in this study.

Because sustaining a heart-healthy lifestyle was not explicitly addressed in this study, a longitudinal study would be appropriate to measure adherence with a lifestyle modification over time. As the men in this study had only engaged in lifestyle changes for a relatively short time (i.e., one year or less), a research study that followed these men over a number of years should be conducted to determine if these men sustained their heart-healthy lifestyle.

Furthermore, as only nine men were interviewed for this study, the categories were not fully saturated. For that reason, repeating this study with a larger sample set would enable saturation of the categories, and enrich the theory. In addition, responses from more participants would help to support or refute the validity of these findings.

Finally, the findings of this study suggest that there would be some value in conducting this same research with female participants. The findings of that research could be compared to this study to determine if men and women use the same process to initiate and support a heart-healthy lifestyle.

Summary

Heart disease remains a leading cause of death and disability in Canada. In addition, it accounts for the highest expenditure of healthcare dollars among diseases. CAD also has
personal and emotional components that arise from living with a chronic progressive illness. Both the economic and personal burdens of CAD demonstrate the need to reduce its long-term disability and mortality. Nurses have the opportunity to make a significant impact on the health status of Canadians by helping those afflicted with CAD engage in lifestyle changes.

However, before nurses can effectively help middle-aged male cardiac patients address their risk factors, it is necessary to understand the process they go through to initiate and sustain a heart-healthy lifestyle. Through analysis of participants’ narratives, I identified key elements of that process.

In the present study, it became apparent that making sense of their experiences and information they received was essential to beginning a new lifestyle. An accurate perception of health and acceptance of the disease helped the men to better understand their risk factors, especially their impact on the disease.

My findings suggest that men need support to be successful with lifestyle changes. It is not a simple task and requires both support from healthcare professionals, family, and friends. Nurses need to be aware of the need for support and to have the skills to intervene when necessary. That is, they need to both provide support themselves plus help others provide it. This may entail teaching friends and family about the disease, its treatment, and the necessity of lifestyle changes.

Getting serious about engaging in new health behaviours also emerged as a significant factor in this study. Getting serious, the final stage of the process, related to choosing to live, recognizing former behaviours as destructive and doing well. When all the
dots of the process were finally connected, men were able to initiate and sustain a heart-
healthy lifestyle.

The findings of this study provide nurses with some insight into what middle-aged
men with CAD go through to change their lifestyle. The findings presented here add to the
existing knowledge of how to educate and support men in their efforts to initiate and sustain
a heart-healthy lifestyle.
References


Appendix A

Interview Guide

The following are examples of trigger questions that will be used during the interview to help elicit the process of decision making used by the participants to change of health behaviour and to help guide them in articulating their thoughts and experiences.

1. What change(s) did you make in your lifestyle after you discovered you had coronary artery disease?

2. What specific event or factor initiated the change in lifestyle?

3. When did the change occur?

4. What else was happening in your life at the time of the change?

5. You have said (such and such). Can you tell me more about that?

6. From what you are telling me, it seems to me that you may be thinking or feeling (such and such). (Wait for a response from the participant).

7. Is there anything else you would like to tell me?
Male Cardiac Patients Decisions to Initiate and Sustain a Heart-Healthy Lifestyle

My name is Sandra Grimwood. I am a registered nurse and have worked in the Operating Room for the past 21 years. As well, I am a student in the Master of Science in Nursing (MSN) program at the University of British Columbia (UBC). For my thesis, I am conducting a study about how the male cardiac patient aged 44 to 54 years decides to initiate and sustain a heart-healthy lifestyle. The purpose of this letter is to explain my study and to ask if you are willing to participate.

Having coronary artery disease is a unique experience. I believe that middle-aged men make unique decisions that impact rehabilitation and secondary prevention. I believe that cardiac nurses should provide support and information to middle-aged men both before and after medical or surgical intervention. However, before nurses can help middle-aged men effectively, we must know what their needs are. By participating in this study, you will be helping middle-aged male patients of the future.

If you participate in the study, I will talk with you one or two times. Each conversation will last up to 60 to 90 minutes and will be conducted in a private room or a place of your choice. I will not ask you set questions; instead I will ask you to tell me in your own words how you decided to engage in risk factor reduction. If necessary, a second conversation may take place in the future for purposes of clarifying information and receiving feedback on the study’s findings.

You are under no obligation to participate in the study. If you do, you may withdraw from the study at any time, may refuse to answer any questions during our conversation, or may ask that any response or information you have given be deleted. Whether or not you participate, you will receive the same treatment from the hospital staff.

The conversation will be audiotaped. When I transcribe them into printed format, I will delete any information that could possibly identify you. Your tape and the printed copy of your conversation will be marked with a code number, will be stored in a secure place, and will be heard/seen only by me, a professional transcriptionist, and my thesis committee, two UBC faculty members. When the study is completed, all data will be securely stored for five years as per UBC policy. At the end of that time I will destroy the tapes and the printed copies. At any time during the study, you are welcome to listen to/see the tapes/transcripts of your own conversations. As well, you will be offered a copy of the final report of the study.

If you want to participate in my study or if you want to discuss it further before deciding, please fill in the tear-off slip at the bottom of this letter and return it to the Healthy