CARDIAC REHABILITATION: PERCEIVED SOCIAL SUPPORT OF PHASE 3
WOMEN PARTICIPATING IN RURAL AND URBAN CENTERS IN THE STATE OF OREGON

by

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ABSTRACT

Purpose of the study:

Cardiac Rehab programs help people recover from the physiological and psychological damage of a recent cardiovascular event through the education of patients about heart healthy lifestyle changes, lowering modifiable risk factors and implementing safe exercise programs. Few studies have examined the role that a Cardiac Rehab environment may have in providing social support to its participants. No previous study has examined the perception of social support within the Cardiac Rehab environment of women exclusively. The purpose of this study was to assess the perceived levels of social support of Phase 3 women participating in Cardiac Rehab programs in the state of Oregon.

Procedure:

Cutrona and Rusell's (1984) Social Provisions Scale (SPS) was used to measure the perceived levels of social support within the Cardiac Rehab environment. Participants were asked to apply each answer as it pertains to the cardiac rehab environment, keeping their current relationships with staff and peers in mind. The returned surveys were divided into rural or urban Cardiac Rehab centers and results were analyzed and compared.

Findings:

Phase 3 women in cardiac Rehab perceive an overall high level of Social Support on the SPS and on the subscales of reliable alliance, guidance, social integration and attachment. There were no statistically significant differences among those participants with or without a spouse or significant other. Rural cardiac Rehabs had a significantly higher overall perception of social support and statistically higher level of support on the subscales of social integration, attachment and reassurance of worth.
Conclusions:

This study found the SPS to be a useful tool in generating dialogue with women about their health and their perceptions of the Cardiac rehab environment. In addition to the returned surveys, unsolicited letters and notes were received, echoing the thoughts and experiences of rehab patients. Women in Cardiac Rehab programs in the state of Oregon feel that they can rely on staff to help them when, and if, they need it (reliable alliance), and that they feel they are offered guidance in the form of instruction and tangible aid. They also appear to have developed relationships with staff and peers (attachment), and feel that they belong to a group, identifying themselves with one another (social integration). This study found significant differences in the perceptions of women in rural Cardiac Rehabs than those in urban ones. Women in Rural programs reported statistically higher perceptions of total social support and in the subscales of social integration, reassurance of worth and attachment. It may be that smaller rural cardiac rehab centers in rural communities test high in these areas because, by virtue of living where most everyone knows everyone else, the rehab center serves as more of a social nexus than it does in urban centers. Results highlight the importance of the social support within the Cardiac Rehab facility and warrant further investigation.

Chair:

MA Program: Kinesiology Sonoma State University

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Sincerely, Jennifer Michael Scott
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Chapter I: Introduction

Personal Statement

Cardiovascular Disease is the leading cause of death in the United States. It affects 100 million people a year and contributes to 60 percent of all deaths annually. Almost 1.5 million people in this country suffer a heart attack each year. Only two-thirds of them survive (American College of Sports Medicine [ACSM], 2008).

Cardiovascular Disease (CVD) has long been thought of as a disease that targets men more than women. However, statistics show that heart attack, stroke and CVD are the number one cause of death among American women, claiming 455,000 lives a year, which translates to nearly 1 death per minute. CVD claims more lives than the next five causes combined including all forms of cancer. Women 40 years and older who suffer a heart attack are less likely than men of the same age to survive a year after their first event (American Heart Association [AHA] 2008).

Men may develop the first signs of heart disease between the ages of 35 and 40. Men between the ages of 39-49 are six and a half times more likely to have a heart attack than women from the same cohort. The condition doesn’t usually affect women until a decade later. One out of nine women between 45-64 years suffers from heart disease. By the age of 65 their risk for CVD surpasses that of men in the same category; one in three women over the age of 65 has heart disease (Piscatella, & Franklin, 2003).

The symptoms of a heart attack differ between the genders. Women’s signs and symptoms can often be more subtle than men’s. As such, women are more often
misdiagnosed, resulting in less aggressive procedures and treatments by health care professionals and further health complications. Diagnostic testing that would be standard protocol for men is often not referred for women. Response to treatments has also been found to differ as medications given to men may not have the same outcome when prescribed for women. For example, Digoxin is often prescribed for Heart Failure. It has been found to be associated with an increased risk of death in women but not in men (AHA, 2009).

Among primary care physicians, only 18% were aware that more women die annually of CVD than men. Forty-three percent of women surveyed in 2006 did not know that heart disease is the leading cause of death among women. The CVD death rate for black women was 28% higher than that of white women in 2005. Thirty-one percent of black women and 29% of Hispanic women knew that Heart Disease was their greatest health risk as opposed to 68% of white women. One in thirty women die of breast cancer; one out of three will die from Cardiovascular Disease.

In witnessing the prevalence of this disease and the present statistics it is baffling to discover that there is a paucity of studies done on women and CVD. Women represent 38% of subjects in National Institute of Health (NIH) funded studies on CVD. Three out of four cardiovascular clinical trials do not report sex specific results further impairing the ability of clinicians and researchers to make conclusions about their effects on women (AHA, 2009).

Approximately 700,000 Heart Disease patients per year undergo angioplasty or bypass surgery. Only 31% of all Percutaneous Coronary Interventions, with and without stent insertions, were performed on women in 2005. Among Medicare patients men are
two to three times more likely to receive an implantable cardio-verter defibrillator for prevention of sudden cardiac death (AHA, 2009).

Many of these patients are thereafter referred to Cardiac Rehabilitation programs. These programs work to educate people about the mechanism of Heart Disease and ways in which they can mitigate modifiable risk factors such as high cholesterol, hypertension, diabetes, obesity, smoking and stress. They offer medication education, assistance with nutritional needs and help deliver safe monitored exercise programs. Implementing these lifestyle changes and adhering to a regular monitored exercise program have been shown to decrease the likelihood of a recurring event, as well as increasing the quality of daily living and self confidence. Studies show patients who attend Cardiac Rehab are 20–25% less likely to die from a recurring heart attack than those who do not attend. Studies have shown that 82 percent of the coronary events in women can be prevented by the implementation of consistent lifestyle changes. The existing barrier that hinders preventative action seems to be that many women and their primary health care providers do not realize that CVD is the number one killer of women in America (ACSM, 2008; AHA, 2009).

I worked for three years as an exercise specialist in a small rural Cardiac Rehab facility. Many patients would come in after they experienced a cardiac event and enter our Phase 2 telemetry monitored exercise program. An event could mean one of many things: a heart attack or myocardial infarction (MI), a coronary angioplasty bypass graft (CABG), an aortic valve replacement, angina pectoris (chest pain), percutaneous transluminal coronary angioplasty (PTCA) and atrial fibrillation. The patients were referred to us by a physician with the goal of increasing their exercise capacity over 36
sessions of telemetry monitored exercise and slowly increasing their activities of daily living.

We met with patients for exercise three days a week. Upon starting our program, many patients were unable to walk for two minutes on the treadmill without stopping because of angina or shortness of breath. Over time, most of these patients were able to sustain exercise for 60 minutes. They would then graduate from the telemetry monitored exercise, and either continue in our Phase 3 maintenance program, or would exercise outside of the program on their own. Some of our patients were part of the Risk Reduction Program. Their goal was to lower their risk factors for Heart Disease in the hopes of staving off an event.

Many patients embraced the new lifestyle changes and became empowered after seeing the results of all of their hard work. Others would only stay as long as the Phase 2 program would allow. Some became believers and continued these learned nutritional and exercise strategies in our Phase 3 maintenance program or at home. The motivation for each patient was different. It became my goal to find ways to empower each person about their personal choices in relation to their specific ailment.

On more than one occasion I became aware of something else going on within the Cardiac Rehab environment that was quite special. Because of their shared experience, patients appeared to have developed tight connections with each other. This allowed certain patients to talk with others about their experience of CVD. Through conversation patients encouraged and inspired each other as they met their goals along the way, and helped others adhere to the program. I began to question whether this was a small town phenomenon where patients may have known each other for years within the
community before Cardiac Rehab or whether this type of social support between patients and staff occurred at other Cardiac Rehab centers. In my observation the people who initiated these conversations, more often then not, were women. I was also distinctly aware of the small percentage of women participating in the Cardiac Rehab program compared to men. While I would interview many women for the Phase 2 program, and some would participate for the entire 36 sessions (12 weeks), very few continued on for the Phase 3 program. Questions began to stir within. Were we providing a supportive environment suitable for women? Were the women gaining social support from peers within the Cardiac Rehab program? Were there differences in the perception of social support between rural and urban Cardiac Rehab centers?

**Purpose**

The purpose of this study is to analyze current levels of perceived social support of Phase 3 women participating in Cardiac Rehab programs in Oregon. It is generally accepted that fewer women participate in Cardiac Rehab programs. To date there have been no studies that have examined the perceived social support of Phase 3 women within the Cardiac Rehab environment living in rural and urban communities.

**Theoretical Rationale**

No study to date has compared the level of perceived social support of women in rural and urban Cardiac Rehab centers

**Need for the Study**

Regular aerobic exercise has been shown to decrease resting heart rates and blood pressure reducing the work load of the heart. Adhering to an exercise program improves muscle function and increases the body's ability to take in and utilize oxygen, increasing
one’s energy and decreasing fatigue. Given the obvious importance and benefits of Cardiac Rehab participation, only 11-20% of patients with Heart Disease participate in supervised exercise programs (ACSM, 2008). Women are five times more likely to drop out of Cardiac Rehab programs (Yohannes, Yalfini, Doherty, & Bundy, 2007). By examining current perceptions of social support of Phase 3 women within the Cardiac Rehab environment we can assess ways in which they feel supported within that environment.

Definition of Key Terms

American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR). This organization “is dedicated to the professional development of its members through information, education and networking opportunities. Central to the mission is the improvement of quality of life for patients and families” (AACVPR, 1985).

American College of Sports Medicine (ACSM). This organization “promotes and integrates scientific research, education, and practical application of sports medicine and exercise science to maintain and enhance physical performance, fitness, health and quality of life” (ACSM, 2008).

American Heart Association (AHA). This organization is a national voluntary health agency whose mission statement is “Building healthier lives, free of cardiovascular diseases and stroke” (AHA, 2007).

Angina Pectoris. This condition is more commonly referred to as chest pain. It is a symptom of heart disease and is caused by atherosclerosis, a fat-like plaque build up that limits or interrupts blood flow to the heart muscle. The heart muscle is deprived of the oxygen it needs and becomes ischemic. This ischemia leads to chest pain. Unstable
angina occurs at rest and is unpredictable in nature. Stable angina usually occurs at predictable times during periods of physical exertion or stress. The pain may be in the chest, jaw, shoulder, back or arm. It is usually relieved by rest and or nitroglycerin medication.

**Atrial Fibrillation.** During atrial fibrillation the two upper chambers of the heart (atria) quiver instead of beating efficiently. Blood is not pumped completely out of the heart and it may pool, creating a clot. If a clot occurs in the atria and leaves the heart it can become lodged within an artery in the brain, causing a stroke.

**Cardiac Rehabilitation (Cardiac Rehab).** This is a rehabilitative program designed to help patients of a recent cardiovascular incident to recover from the psychological and physical damage of a Cardiovascular event. Cardiac Rehab usually takes place within a community facility or as part of an outpatient hospital program. Health professionals, cardiac rehab nurses, exercise physiologists and nutritionists work together with the patients physician to individualize progressive cardiovascular exercise programs and educate patients about heart healthy nutrition in an attempt to stave off a recurrent event and lower cardiovascular risk factors.

**Coronary Angioplasty Bypass Graft (CABG).** The CABG procedure involves taking a healthy vessel from another part of the body and grafting it on to the heart muscle. This new vessel is used to bypass the clogged artery and increase the flow of blood and oxygen to the heart.

**Ischemia.** Is a condition in which blood flow (oxygen) is inhibited from a part of the body. Cardiac Ischemia refers to a lack of blood flow (oxygen) to the heart muscle.
Myocardial Infarction (MI). The coronary arteries supply blood and oxygen to the heart. An MI or heart attack occurs when the blood supply to the heart muscle is reduced, interrupted or stopped. This happens when the plaque build up caused by atherosclerosis blocks or ruptures apart causing a blood clot within the artery.

Percutaneous Transluminal Coronary Angioplasty (PTCA). This procedure is done to increase the flow of blood to the heart muscle. A balloon tipped catheter is inserted and inflated into the narrowed vessel. This compresses the plaque and widens the vessel to allow the heart to receive more blood and oxygen. A metal wire mesh stent is then placed inside of the balloon to keep the artery opened.

Phase 1 patient (Ph 1). This is a patient who has had a recent cardiovascular event. These patients undergo patient education during their hospital stay, learn about the healing process of their heart, medication information (side effects, contraindications and medication interactions) and nutritional changes that they will need to make in order to lower their chances of a recurrent event.

Phase 2 Patient (Ph 2). A Phase 2 patient is one who is referred to a Cardiac Rehabilitation program by a physician post event. They have gone through the Phase 1 education in the hospital. They are usually referred for 36 sessions of telemetry monitored exercise, scheduled three days a week for 12 weeks. Blood pressure, heart rate and rate of perceived exertion are monitored closely, and all information is passed on to their primary physician and/or cardiologist. Patients are slowly progressed through an individual exercise and resistance training program, while simultaneously developing new ways to meet their nutritional goals and implement heart healthy lifestyle changes.
Patients graduate either to *exercise clearance* (exercising on their own) or into the Phase 3 program.

**Phase 3 patient (Ph 3).** These are patients who wish to maintain their health status and continue to develop new health goals. They are no longer telemetry monitored, but are still monitored via blood pressure, heart rate and rating of perceived exertion during exercise. These patients are often referred to as *exercise maintenance* patients.

**The Risk Reduction Program.** The Risk Reduction Program is a program for those individuals who have two or more risk factors for heart disease. These patients are self or physician referred. Self-referrals require a physician's clearance as exercise is required. Once all health information is obtained, the patients begin a monitored exercise program and meet with a nutritionist to develop strategies for implementing behavioral changes. The goal is to lower their risk factors through education and exercise.

**Research Questions**

1.) **How do women in Phase 3 maintenance programs perceive the level of social support in Cardiac Rehab programs as measured by Cutrona and Russell’s (1987) Social Provisions Scale (SPS)?**

   a.) Overall Score on the SPS.

   b.) Score on each of six subscale

2.) **Does the absence or presence of a spouse or significant other affect Phase 3 women’s perception of the Cardiac Rehab environment?**

   a.) Overall score on SPS

   b.) Score on each of the six subscale
3.) Is there a different perception of social support among women in Phase 3 rural and urban Cardiac Rehab facilities?

a.) overall score on the SPS

b.) score on the individual subscales
Chapter II: Review of Literature

Introduction

Once patients have sustained a cardiac event they are usually referred by a physician to a facility where they can learn about, and hopefully make, healthy lifestyle changes. Over time the staff progressively implements an individualized exercise training program while finding ways to encourage dialogue and education about heart healthy eating choices. Often the patient will meet with a nutritionist to educate and assist in creating nutritional goals. Obesity is one of the modifiable risk factors for cardiovascular disease. While weight loss is not always every patient’s goal, it is common that weight maintenance is a focus, with energy in/energy out scale being used to illustrate the importance of eating nutritional calories to help fuel daily activities. Hypertension (high blood pressure), hyper-lipidemia (high cholesterol), smoking cessation, stress management techniques and diabetes management are common topics for new cardiac patient education. Adhering to a regular exercise program and integrating these healthy lifestyle modifications into one’s life can lower the recurrence of cardiac event and increase one’s activities of daily living.

Benefits of Cardiac Rehabilitation

Intensive cardiac rehab programs increase the quality of life of elderly veterans more than standard outpatient therapy and general populations benefit as well (Sledge, Ragsdale, Tabb & Jarmukli, 2000). Increases in aerobic capacity, increased muscle function, and improved activities of daily living have been reported as many of the physical benefits of Cardiac Rehab participation. Decreases in body weight and resting
blood pressure, heart rate and reduced body fat have been recorded (ACSM, 2008). Participants experience increased sense of well being, and self confidence. Female Cardiac Rehab participants have experienced decreases in social isolation and decreases in hospital anxiety depression scores (Turner, Bethell, Evans, Goddard & Mullee, 2002; ACSM, 2008). Attendance and adherence to these programs are associated with decreased mortality. However, one must make a commitment to the program and thus to their own health in order to reap the benefits of such a program (Bray & Cowan, 2004).

Beliefs about Cardiac Rehab

There are many erroneous beliefs about Cardiac Rehab. These beliefs influence the care received and the effective recovery process after a cardiac event. Illness beliefs affect the way an individual will choose to cope with their illness. Post MI patients were interviewed prior to Cardiac Rehab participation about their beliefs and perceptions of the program. Thirty to sixty percent of the patients declined a single session after being referred to the program. Despite prior contact with nursing staff and an invitation to participate in Cardiac Rehab, eleven of the fourteen patients were still uncertain as to what it involved. They suggested that it had something to do with exercise but knew little else about it. Some believed that it would be harmful to them and couldn’t understand how it would help recovery from a heart attack (Cooper, Weinman, Jackson & Horne, 2005).

Hypertension (high blood pressure) is one modifiable risk factor for developing CVD. Upon entering a Cardiac Rehab program, methods to help lower one’s blood pressure are discussed with hypertensive patients. Regular exercise has been found to lower resting blood pressure. A meta-interpretation of eleven qualitative research studies
about lay beliefs of hypertension found many interesting discrepancies between health care provider's and patient's beliefs. Many patients reported having symptoms of hypertension, yet were told by their health care provider their perceived symptoms were in fact not symptoms of hypertension at all. Patients were told that there are no symptoms of hyper-tension, but since having high blood pressure is dangerous, a course of action to lower it was discussed. For many, the notion of having a disease (hypertension) without symptoms does not fit the image they have of disease. For the patient this raised the question of validity of their diagnosis, and created an air of distrust between them and the health care provider. Most patients surveyed believed the physician prescribed medications for high blood pressure because they were unable to educate them about changing their lifestyle through exercise and nutrition. When encouraged to change their lifestyle to lower their blood pressure, they questioned why they were prescribed medications to take for the rest of their life (Schlomann & Schmitke, 2007).

Instructing people to change their lifestyle seems to contradict such ambiguous, ethereal risk factors. This must be taken into account when we talk loosely of changing lifestyle habits and educating patients and clients as to why these changes are important. This study also illustrates how often the intentions of health care providers and Cardiac Rehab staff can often be misinterpreted if patients feel that their perceptions are not being addressed.

**Patient Education**

Most Cardiac Rehab Programs take a multi-dimensional approach to educating patients about healthy lifestyle choices. Educational classes, videos and reading materials are often offered as ways to create dialogue about the information, and the challenges of
modifying behaviors, in regard to nutrition and exercise. The average American has an eighth grade reading level. One study asked 30 rural and 30 urban Cardiac Rehab centers to contribute five pieces of patient education literature. They were to be materials that were easily available to the public, non-anatomical, not involving surgical procedures or be from the American Heart Association. Twenty-eight percent of the centers responded and sent their materials to be analyzed. There were no significant differences between rural and urban centers. Eighty-seven percent of materials were written at a 10th grade reading level or higher, which is beyond the eighth grade reading comprehension level of the average American adult. Only 9% of urban and 14% of rural materials were at an eighth grade reading level or below (Johnson & Stern, 2004).

Part of the education process is to hand out educational literature on ways to engage in a heart healthy lifestyle. Materials need to be comprehensible to the average patient. One of the reasons that people have difficulty adhering to the goals they set, or buying into preventative medicine, is due to a lack of understanding as to what those goals are and why they are important. If these educational materials are available to patients and used to represent Cardiac Rehab and if health care staff members wish to increase referrals to the program, then educational materials must reflect the average reading level of most Americans.

Factors Influencing Attendance.

In order for an individual to gain the many benefits from participating in a Cardiac Rehab program, they must be referred to the Cardiac Rehab program by a Physician. Studies have shown that women are less likely to receive referrals to Cardiac Rehab (Caulin-Glaser, Blum, Schmeizl, Prigerson, Zaret, & Mazure, 2001). There needs
to be a relationship between Physicians and Cardiac Rehab centers within their service area. Physicians and Cardiologists affect not only a patients exposure to an available program but convey their opinion of the necessity of the program. A Physicians endorsement independently influences attendance (Johnson, Weinert & Richardson 1998; Cooper, Jackson, Weinman & Horne, 2002).

Forty percent of rural post-MI patients, upon discharge from the hospital, said they would not attend a Cardiac Rehab program. Of the 100 surveyed, 34% said they felt their doctor did not recommend the program. The strength of this finding was doubled when the authors discovered that one of the significant predisposing factors that influences use of rural Cardiac Rehab services was the perceived power locus of others control. Other’s opinions, specifically the patient’s physician’s, influenced the patient’s opinion of the rehab process. If a patient perceives the rehabilitation process as not recommended by their doctor they are less likely to pursue it (Johnson, Weinert & Richardson, 1998; Cooper, Jackson, Weinman & Horne, 2002).

Many patients are referred to programs, but they choose not to attend for one reason or another. In one study, Cardiac Rehab staff members reported that the top three barriers for patients who had been referred but did not attend were: conflicts with work, financial cost and lack of motivation (Evenson & Fleury, 2002).

Women, older adults, those less educated, those with lower income and unemployed people are less likely to attend a program. Mildly physically impaired patients are 42% less likely to attend than those moderately impaired. Patients who believe they are incurable and unable to change the course of their illness will choose not to pursue these programs (Cooper, Jackson, Weinman & Horne, 2002). These findings
are consistent with Husak, Krumholz, Lin, Kasi, Mattera, Roumanis and Vaccarino (2004) who found participants of Cardiac Rehab to be younger, more often employed, less financially stressed, having a lower prevalence of CVD and being in a better physical functioning state. A rural study found that those more likely to participate were older adults with a higher level of social support, living in more urban areas who declared an intent to participate in the program (Johnson, Weinert & Richardson, 1998). While all are seemingly encouraged, it appears that those patients who need the services the most are those who do not attend.

Patients who drop out are five times as likely to be women. Patients who perceive their illness as less severe, or are younger, with higher amounts of psychological distress, often drop out. Patients with borderline depression, angina and Percutaneous Transluminal Coronary Angioplasty (PCTA), or those with stents are twice as likely to quit than those diagnosed as Coronary Angioplasty Bypass Graft (CABG) patients. Every effort should be made to identify depressed patients and get them the appropriate help. Given the challenges that one must face in order to initiate a new exercise program, every effort must be made to retain and find ways to support participants who have already struggled to attempt to change their lifestyle (Yohannes, Yalfini, Doherty & Bundy, 2007; Turner, Bethell, Evans & Goddard, 2002; Husak et al 2004).

**Social Support**

Many studies have highlighted the importance of social support and its positive and negative affects on the health and well being of individuals. Davidson and Schumaker (1987) discovered that the classic risk factors for CVD (smoking, family history, high blood lipids, hypertension and diabetes) accounted for less than 50% of the
variance in the occurrence of CVD. According to Sotile (1996), many studies have implicated social support as playing an important role in the development of certain diseases, and that social support has also helped individuals to slow the progression of cancer and CVD.

Social support is used to describe both functional and structural forms of one’s social environment. According to Schumaker and Czajowski (1994), structural support is offered by one’s social network and includes the size, density, complexity, symmetry and stability of an individual’s family, friends, coworkers, health professionals and community resources. The functional component deals with the individual’s perception of the support and resources available and is called social support (Sotile, 1996). The benefits of social support on mortality in patients with CVD appear for both structural and functional measures of support (Uchino, 2004).

Social Support Outside of Cardiac Rehab

The term social support applies to the large network of people who aid an individual in their pursuit of personally valuable goals and during times of distress. Intimate attachments with others such as a spouse or a significant other is important in promoting recovery from CVD (Sotile, 1996). According to Franks, Stephens, Rook, Franklin, Keteyian, and Artinian (2006) those with a spouse experience a faster recovery rate after surgery, exhibit decreased psychological stress, and have higher rates of survival following a heart event.

Women are less likely to have social support from spouses and health care professionals when it comes to secondary prevention, (action initiated by the presence of symptoms of a potential disease that may cause irreparable damage or a medical
condition). Men receive more information on Cardiac Rehab services and more physician referrals. It appears that men receive greater spousal support as well. This is unfortunate, as within 6 years of having an event, 3% of women will have another MI, 34% will develop angina, 20% will develop Congestive Heart Failure and 6% will die a sudden death (Caulin-Glaser., et al 2001; Hammond, Habra & Linden, 2000).

Franks et al. (2006) found that during the initial stages of the Phase 2 program spousal support was associated with higher level of patients health behaviors. Spousal support predicted increased mental health of Phase 2 patients over a six-month period. *Spousal Control* is defined as attempts to induce needed changes and behaviors in a partner who is unable to do so on their own. Spousal Control was negatively associated with the patient's mental health and health behaviors. Being forced to make behavior changes that they had not made on their own became a source of stress for themselves and their relationship. However, patient's reports of marital satisfaction predicted patient's positive reports of mental health. Spouses may behave in ways that both support and/or attempt to control their partners towards changing their health behaviors.

One study examining rural patient's use of a Cardiac Rehab programs found that social support of family, friends and health care providers was a key factor in whether patients participate in a Cardiac Rehab Phase 2 program and the management of long term illness (Johnson, Weinert & Richardson, 1998).

Another study found that social support was not a significant predictor of Cardiac Rehab participation in post CABG patients. Husak et al. (2004) believed that other factors may be more important predictors such as *co-morbidity burden* (the burden of living with one or more disease) and socioeconomic status. They concluded that future
studies may want to examine specific subsets of social support to determine whether specific sources of social support may be more important than others.

Social Support Within The Cardiac Rehab Program

Other types of social support that assist people in dealing with the issues arising from a near death experience, and the complexities of dealing with implementing lifestyle changes, come from Cardiac Rehab staff members and fellow patients within the program. Social support can be a good source of self-efficacy information, both positive and negative. “People infer the extent of their capabilities from interactions and social comparisons with their social environment and comparisons with others (Woodgate, Brawley & Shields, 2007, p. 1043).”

**Self-efficacy** is defined as a belief in one’s capability to organize and execute a course of action to produce given benefits. Self-efficacy is a crucial component in whether people will consider changing their habits or in considering attending a Cardiac Rehab. Bray and Cowan (2004) studied efficacy beliefs in regards to compliance within an outpatient Cardiac Rehab program and patients’ intention to exercise post-discharge. **Proxy self-efficacy** is described as “confidence in the skills or abilities of a third party to function effectively on his or her behalf” (Bray & Cowan, 2004, p. 74 ). In this instance the exercise consultant and rehab staff offers technical feedback, encouragement and motivation. They found that proxy self-efficacy significantly predicted positive exercise self efficacy and post-program intentions three months after completing Cardiac Rehab.

Woodgate, Brawley, and Shields (2007) conducted a study that examined the social cognitions and strategies used by Phase 3 patients to achieve lifestyle changes. Phase 3 patients are usually those who have graduated out of the Phase 2 program and are
consistently exercising within the Phase 3 (maintenance) program. Most Cardiac Rehab studies look at Phase 1 and 2 patients to understand the mechanisms of change among initial patients. Woodgate, Brawley, and Shields (2007) used Cutrona and Russell’s Social Provisions Scale (1987) to assess perceived social support and its relationship to self-efficacy and health related quality of life in Phase 3 Cardiac Rehab patients. This scale has been used with a variety of populations. Cutrona, Russell and Rose (1986) used the Social Provisions Scale (SPS) with elderly subjects to assess perceived social support over a six-month period and correlated it with physical and mental health. Fifty senior citizens between the ages of 69.4 and 74.5 were given the SPS during their initial visit and six months later. Individuals who reported higher levels of social support during the initial interview reported better physical health six months later. Overall higher levels of social support on the total SPS and on the individual SPS subscales of reassurance of worth (feelings of competence with one’s skill level) and opportunity for nurturance, (sense of fulfillment gained by being relied upon by others), were directly related to changes in physical health. Subjects who reported high levels of mental health during the initial assessment experienced higher levels of social support at six months than those who expressed poorer levels of mental health. The individual subscales of reliable alliance, (tangible aid and assistance from others) and guidance, (informational and educational support) interacted with the stress levels of subjects, predicting changes in mental health. People who acknowledged the presence of reliable alliance and guidance within their social networks were able to access these resources during times of stress. These results illustrate the buffering hypothesis, wherein social support can aid individuals during stressful times, buffering or dispelling some of the additional mental
and physical problems that can arise from times of duress (Cutrona, Russell, & Rose, 1986).

Woodgate, Brawley and Shields (2007) further refined the SPS measures, adding an additional subscale [symptom oriented integration] previously used by Cardiac Rehab patients in a study by Rejeski and Brawley (1996). The following three subscales were internally consistent for cardiac content and exercise; guidance had an alpha of .70, reliable alliance .79 and symptom oriented integration .83. These social provisions were significantly correlated and had a range of r’s = .41-.59, ps < .05. Results showed that Phase 3 patients who perceived higher social support from Cardiac Rehab staff had greater self-efficacy beliefs and had greater amounts of physical health status and health related quality of life (HRQL) than those who perceived a moderate amount of social support. Staff members helped with teaching new skills, integrating information and offering guidance. The social support offered by staff can empower patients to believe in their abilities and to recover some of the confidence that they had prior to the cardiac event.

Filip, McGillen and Mosca (1999) examined post-MI patients' preferences within Cardiac Rehab programs. According to the study, the strength of the social support offered within the Cardiac Rehab environment is of premier importance. Patients 65 or older tend to prefer home based programs as they decrease travel time to and from a program, whereas younger patients (under 65) preferred short term Cardiac Rehab programs (6-12 weeks) and long term programs with comprehensive educational elements within a Cardiac Rehab facility. Both groups valued the importance of exercise
advice, nutritional counseling and long-term contact with staff. Women rated long-term contact with staff as the most important element of a Cardiac Rehab program.

This finding is consistent with Moore and Kramer (1996) who found that women rated monitored exercise, staff encouragement and peer support as the most important elements of participation. Women were most concerned about experiencing pain or fatigue as a result of their exercise sessions. Men were most concerned about being able to set their own goals. Both men and women wanted to choose their own exercises and felt unable to discuss their progress with staff. These findings are interesting in that staff may be limiting some activities due to safety concerns. In my own experience, we had situations where a patient was limited by what we saw on the telemetry monitor, yet the patient felt no symptoms from the potentially dangerous rhythm we viewed. However, creating an environment where patients can voice their concerns and personal goals is an essential part of creating an individualized training program.

When comparing home based programs to hospital based programs the benefits of one option became the drawback of the other. Caucasian patients employed outside of the home were more likely to participate in home based programs. Patients who chose to participate in a hospital program tended to be of an ethnic background (Grace, McDonald, Fishman & Caruso, 2005). These patients believed that they benefited from being monitored, having access to the facilities, and having social support to aid in their recovery. The drawback to being in a hospital program was travel time to and from the facility. Those who chose to work out at home benefited from not having to travel, but their biggest drawback was lack of social support. These patients also had significantly greater denial as to the seriousness of their heart condition and had greater work-related
time constraints that interfered with adherence to the program. This study illustrates the importance of social support as an adherent component of a Cardiac Rehab program. Hospital-based participants recognized the value of social support and its role with their exercise program compliance. The home exercise participants felt that they would be encouraged to commit to their exercise program more so if they had the camaraderie and social support inherent in a structured program (Grace, McDonald, Fishman & Caruso, 2005).

If patients can commit to scheduling and attending a Cardiac Rehab program it can become an important part of their everyday life. New friendships emerge among patients and long-term relationships are formed with staff members. This environment can help to nurture and educate individuals about healthy lifestyle changes. The challenges encountered within this process can be shared with staff members and other patients who can in turn help and support the patient succeed in his / her Cardiac Rehab program.

Previous studies have investigated the affect of social support on Cardiac Rehab attendance. No previous study has examined at perceived social support of Phase 3 women in Cardiac Rehab programs. This author found two studies that have touched on the effect of social support within a Cardiac Rehab facility but neither study had a large enough population of women to demonstrate gender differences in their results (Woodgate, Brawley, & Shields, 2007; Bray, & Cowan, 2004).

Yohannes, Yalfini, Doherty and Bundy (2007) suggested that it would be helpful for future studies to investigate and compare drop out rates of rural and urban Cardiac
Rehab centers, as it is generally accepted that women drop out from Cardiac Rehab programs more than men.

Two previous studies were found that examined urban and rural Cardiac Rehabs centers. In 2004, Johnson and Stern compared the readability of patient education materials of urban and rural Cardiac Rehab centers in Minnesota. One study asked 30 rural and 30 urban cardiac rehabilitation centers to contribute five pieces of patient education literature. These were to be materials that were easily available, non-anatomical, not describing surgical procedures or authored by the American Heart Association. Twenty eight percent of the centers responded and sent their materials to be analyzed. The study found that there were no significant differences between rural and urban centers. Eighty-seven percent of materials were written at a tenth grade reading level or higher, beyond the reading comprehension level of the average American adult. Only 9% of urban and 14% percent of rural materials were written for an eighth grade reading level, or below (Johnson & Stern, 2004).

The other study (Johnson, Weinert & Richardson, 1998) used Anderson Newman’s framework studying factors that influence the use of Cardiac Rehab services by rural residents. Questionnaires were administered on three separate occasions. The 1st (given at time of discharge) assessed predisposing factors. The second (given 2 weeks post discharge and upon the completion of 12 weeks of Phase 2) assessed need factors, and the third assessed enabling factors given upon completion of 12 weeks of Phase 2. Only 28% of those surveyed participated in any part of Cardiac Rehab, with only 17% completing all thirty-six sessions. Assessments of predisposing factors found that patients recommended by a doctor with high levels of social support, who were not employed,
and who perceived health as the ability to cope with change were more likely to participate in Cardiac Rehab. Enabling factors affecting participation were the presence of adequate economic resources. The assessment of need factors found that patients with fewer physical limitations were more likely to participate. Further searching in to Profile of Mood States (PMOS) found that the subscale for tension to be statistically significant in affecting attendance. Final results from this study indicate that older urban adults with greater levels of social support, who stated that they would come to Cardiac Rehab were the most likely to do so. The findings with rural Cardiac Rehab Phase 2 participants echo what other studies have found social support from family, friends and Health Care workers plays an important role in the successful management of long term illness.

Only two studies explored rural rehab centers. Neither of these studies addressed social support as a main theme and no study to date has compared the levels of perceived social support for women in rural and urban Cardiac Rehab centers.

Previous studies have compared the experiences of rural and urban women diagnosed with breast cancer. Bettencourt, Schlegel, Talley and Molix (2007) compiled a meta-analysis of 41 different studies compared the breast cancer experience of rural women to that of urban women. They found that medical personnel were important sources of support for rural women during the primary treatment process. Most rural women have to travel to urban areas to receive treatment returning to their rural communities and tend to enjoy the social support that they receive from healthcare providers. Leaving the support of medical personnel behind, these women report greater feelings of isolation than do urban women. Post-treatment health care providers can become important source of continued support, by providing patients with health
information about the recovery process. There is some evidence that rural women may feel a stigmatization with the diagnosis of the disease. This stigma can hinder their desire to pursue psychological counseling due to the perceived lack of privacy experienced living in a small town.

Rogers-Clark (as cited in Bettencourt, Schlegel, Talley & Molix 2007) found rural communities to be supportive environments for breast cancer survivors. Friends and neighbors often offer support via telephone calls, visiting, and providing food. Most of the patients in their study felt they would not trade the support of their rural community for the convenience of living in an urban setting. Gray et al. (as cited in Bettencourt, Schlegel, Talley & Molix 2007) found that rural women more often requested the desire to be in touch with other cancer survivors. Facilitating this request allowed patients the opportunity to learn from the others experiences, reducing fears and concerns and ushering them into survivorship. Rural women with breast cancer have different perceptions of their rehabilitative experience than urban women, utilizing health care providers as sources of social support and requesting the contact and social support of other breast cancer survivors.

Bettencourt, Schlegel, Talley and Molix (2007) found many differences between the experiences of rural and urban women with breast cancer. This leads me to wonder whether the Cardiac Rehab experience for rural and urban women may be different as well. There may be differing levels of perceived social support within their respective Cardiac Rehab environments.
Chapter III: Methodology

Introduction

Previous studies have investigated the affect of social support on Cardiac Rehab attendance, but only a few studies have looked specifically at the influence of social support within the Cardiac Rehab facility and its affects on patients (Woodgate, Brawley & Shields, 2007; Bray, & Cowan, 2004). To date no one has specifically investigated perceived social support of Phase 3 women within rural and urban Cardiac Rehab environments. This chapter will outline the methods for this research project investigating perceived social support of this specific group of patients.

Research Questions

1.) How do women in Phase 3 perceive the level of social support in Cardiac Rehab programs as measured by Cutrona and Russell’s (1987) Social Provisions Scale (SPS)?
   a.) Overall Score on the SPS.
   b.) Score on each of six subscales

2.) Does the absence or presence of a spouse or significant other affect Phase 3 women’s perception of the Cardiac Rehab environment?
   a.) Overall score on SPS
   b.) Score on each of the six subscale

3.) Do urban and rural Cardiac Rehab women have a different perception of support?
   a.) overall score on the SPS
   b.) score on the individual subscales
Subjects

The subjects in this study will be Phase 3 female patients currently enrolled in Cardiac Rehab programs in Oregon. For the purpose of this study Phase 3 patients were defined as women who entered the Cardiac Rehab program as a result of a physical cardiac event and who have successfully completed 12 weeks (36 sessions) of Phase 2 telemetry exercise training. As graduates from Phase 2, into Phase 3, exercise is monitored by the Cardiac Rehab staff with periodic blood pressure and heart rate checks. The patients in my study currently exercise within a Cardiac Rehab program at least three days a week. The only demographic variable collected was the presence, or absence, of a spouse (or significant other). In addition I noted whether their participation was in a rural, or an urban, Cardiac Rehab center.

Procedures

All of the Cardiac Rehab centers in the state of Oregon with a Phase 3 maintenance program were invited to participate in this study. Permission was obtained by Carolyn Cutrona to use Cutrona and Russell's (1984) Social Provisions Scale (SPS). This scale has been used with a variety of populations from new mothers to elderly community residents. The SPS uses six subscale items originally proposed by Weiss (1974). The 24 item SPS was used to measure perceived social support of Phase 3 women within Cardiac Rehab maintenance programs. Four questions, addressing each of the six subscales, were administered. Half of the questions describe the presence of support and half describe the absence of support.

The six subscales are: guidance; attachment; social integration; reassurance of worth; reliable alliance; and opportunity for nurturance. Guidance is informational
support given in the form of education or advise often given by teachers or mentors.

Attachment deals with emotional closeness and sense of security that is usually provided by a spouse or significant other. Social integration involves a sense of belonging to a group of people who share common activities. Reassurance of worth acknowledges feelings of competence with one's skill level and often refers to co-workers and peers. Reliable alliance involves feeling that one has tangible aid and assistance available to them under any circumstances, usually capturing family involvement. Opportunity for nurturance involves the sense of responsibility gained by being responsible for another (Cutrona, Russell & Rose, 1986; Cohen, Underwood, & Gottlieb, 2000). Cohen, Underwood and Gottlieb (2000) indicate that the SPS represents a good measure for structural and functional social support.

The women who participated in this study were asked to indicate the presence or absence of a spouse or significant other. Women were classified as rural or urban based on where the survey was returned. Each participant was asked to apply their answers to the SPS questions regarding their current relationships with Cardiac Rehab staff and other patients. They were asked to apply each statement to their experience within the Cardiac Rehab environment. Answers were given using a four-point Likert scale ranging from one (strongly disagree) to a four (strongly agree). After a reversal of negatively related items (indicated by an “R” below) a total score was determined by adding all of the items. The highest possible score was 96 points. Four questions make up each of the six subscales. Each subscale has a possible high score of 16. A high score, reflects a greater level of perceived social support within the Cardiac Rehab environment. The total scale has a reliability of .91. Subscales range from \( r = .65 \) to \( r = .75 \). Subscale inter-correlations
range from r = .55 to r = .99. This measure has consistently predicted important outcomes for general and specific populations (Cohen, Underwood, & Gottlieb, 2000). These questions highlight the relationship between the participant, the Cardiac Rehab staff and their peers and allow a comparison of perceived social support of Phase 3 women within Cardiac Rehab maintenance programs.

**Instrumentation**

Cutrona and Russell’s (1984) twenty-four question Social Provisions Scale (SPS) was given to the subjects to compare the individual’s level of perceived social support within their Cardiac Rehab maintenance program.

**Design And Variables**

This study conducted survey research on Cardiac Rehab Centers in the State of Oregon. The Oregon Society of Cardiovascular and Pulmonary Rehabilitation (OSCVPR) website has a list of all Rehab programs in Oregon and South West Washington. The site lists 32 different programs in Oregon. This list was used to contact each of the centers to determine if they had a Phase 3 maintenance program and whether they were interested in participating in the study. Nine of the rehab centers are no longer in operation: two of the numbers were disconnected, two of the Cardiac Rehabs had closed and five no longer had the facilities for Cardiac Rehab. One center led to the referral of a new Cardiac Rehab that was not on the list. A total of twenty four centers were contacted where a message was left with the Cardiac Rehab Department, or a staff member was available to talk. Four of the centers contacted did not have a Phase 3 maintenance program. However, one of these centers referred the researcher to a health and wellness center where they referred their Phase 2 patients as they graduated into a Phase 3 program.
Cardiac Rehab Directors and staff from the available centers were then invited to participate in the study. Eleven of the 21 qualifying Cardiac Rehab centers in Oregon were interested in participating in this study. A total of 210 surveys were sent to the eleven different centers. One center was eliminated due to hospital policy issues. Another had a willing Cardiac Rehab professional who distributed the surveys to the women, but the women decided that they did not want to participate. One Cardiac Rehab professional expressed an interest in participating but explained that they were currently short staffed. After the initial contact and conversation they no longer responded to surveys or telephone calls.

A total of eight Cardiac Rehab Professionals were willing to participate and agreed to help with this study. All were helpful and excited to be a part of this study. A packet was sent to each center with the pre-determined number of surveys needed. An introductory letter was sent to each center explaining the origin and purpose of the study. This letter was to be placed in a public area. It was hoped that the letter would generate dialogue within the program about the study, and would identify the researcher as a person with previous experience in a Cardiac Rehab program. A second letter was stapled to the front of each survey for the purposes of obtaining informed consent. Contact information for the researcher was provided in order to answer questions that may arise. A blank envelope was provided with each survey. After completing the survey participants placed them into the blank envelope insuring privacy, before returning the survey to the Cardiac Rehab professional. It was requested that the surveys be returned to the researcher no later than September 1st, 2009.
Surveys were sent out on July 7th, 2009 and July 15th, 2009. Follow up calls (or emails) were made on August 5th, 2009 to find whether the packets had arrived, and to see if there were any unanswered questions. Multiple emails were exchanged between the researcher and five of the Cardiac Rehab professionals addressing questions. One Cardiac Rehab Director took it upon herself to help collect the information instead of assigning it to one of her 15 staff members. She went above and beyond the call of duty and photo copied each of my introductory letters and stapled them with the existing consent form and survey. She also placed her own return address on each of individual envelopes so that they could be sent directly to her from any location in the hospital.

Calls and emails were on August 25th, 2009 made to remind the willing professional to return the surveys. All of the completed surveys were returned to the researcher in a manila envelope provided (with return address and postage) by September 1st, 2009.

There was a 20% return rate. Of the 177 surveys sent to the eight qualifying and willing Cardiac Rehabs a total of 35 were returned. This study used the Metropolitan Statistical Area [MSA] and Micropolitan Area to delineate between urban and rural Cardiac Rehab centers allowing comparisons to be made between rural and urban centers. Metropolitan areas are those areas with a population of 50,000 or more. Micropolitan areas consist of one urban cluster of 10,000 people with an outlying population of under 50,000. Rural centers will be Micropolitan and urban centers will be metropolitan as defined by the U.S. Census Bureau (2006).
Data Analysis

The data was analyzed with the assistance of Dr. Cora Neal in the Mathematics Department at Sonoma State University using Statistical Pack for Social Sciences (SPSS). One-way Analysis of Variance (ANOVA) is used to test for significant differences between three or more independent groups.

Implications

The areas of perceived social support illuminated by the women who participated in this survey will help to identify ways in which Cardiac Rehab staff and peers provide for the needs of women who have graduated from the phase 2 program and remain as phase 3 patients. Identifying any differences will allow other researchers to further investigate the implications of those findings.

Assumptions

It is assumed that the patients were honest in filling out their surveys.

Limitations

This study may be limited by a small sample size.
Chapter IV: Results

Introduction

Statistical Pack for Social Sciences (SPSS) software was used to decipher differences in the results. The highest possible total score on Cutrona and Russell's Social Provisions Scale (1984) is 96. The higher the overall score the greater the perception of social support within the Cardiac Rehab facility.

Each of the six subscales has four questions searching for the presence or absence of the perception of social support for that particular provision. The highest possible score for each question is four on a Likert scale with (1) lowest to (4) highest perception of social support. This subscale has a possible high score of sixteen. The higher the score for each individual subscale the greater the perception of that provision within the Cardiac Rehab environment.

Demographics

A total of 35 women from eight Cardiac Rehab programs in Oregon participated in this Survey Research. Based on returns using the MSA participating centers were divided into rural (6) and urban (2) facilities.

Regarding the absence or presence of a spouse or significant other, two women did not answer as to whether they had a spouse or significant other leaving a pool of thirty three women as a sample for this question. Fourteen women acknowledged the presence of a spouse or significant other. One participant identified her daughter as her significant other. Nineteen women did not have a spouse or significant other.
Statistics and Data Analysis

Research question #1a [How do women in Phase 3 Cardiac Rehab programs perceive the level of social support with the Cardiac Rehab environment as measured by total score on SPS?]. Total scores on the SPS ranged between 63 and 93 with an average score of 79 out of a possible 96 with a margin of error (+ - 3.8). I am 95% confident that the true average overall score on the SPS lies between 75.2 - 82.8. Overall, women in Cardiac rehab programs in Oregon reported a high perception of social support within the program from staff and peers.

Research question #1b [How do women in Phase 3 Cardiac Rehab programs perceive social support as measured by the total scores on each of the 6 subscales?]. A number was given for each subscale; 1) Guidance; 2) Reassurance of worth (ROW); 3) Social integration; 4) Attachment; 5) Opportunity for nurturance (OFN); and 6) Reliable alliance. Average subscale scores for women in Cardiac Rehab out of 16 possible points were; guidance (13.68 +/- ME .7), Reassurance of worth (12.62 +/- ME 1.1), Social integration (13.4 +/- ME .9), Attachment (13.4 +/- ME .83), Opportunity for nurturance (11.02 +/- ME .95), and Reliable alliance (15.02 +/- ME .93) (See Table 1).
Table 1. Mean scores for each of the six subscales

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Guidance</td>
<td>13.6857</td>
<td>35</td>
<td>2.25925</td>
</tr>
<tr>
<td>2 ROW</td>
<td>12.6286</td>
<td>35</td>
<td>3.16307</td>
</tr>
<tr>
<td>3 Social Integration</td>
<td>13.4000</td>
<td>35</td>
<td>2.77807</td>
</tr>
<tr>
<td>4 Attachment</td>
<td>13.4000</td>
<td>35</td>
<td>2.48762</td>
</tr>
<tr>
<td>5 OFN</td>
<td>11.0286</td>
<td>35</td>
<td>2.85416</td>
</tr>
<tr>
<td>6 Reliable Alliance</td>
<td>15.0286</td>
<td>35</td>
<td>1.33913</td>
</tr>
<tr>
<td>Total</td>
<td>13.1952</td>
<td>210</td>
<td>2.79182</td>
</tr>
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</table>

A one-way ANOVA analysis was used to compare differences between subscales. They were found to have significantly different means. A Bonferoni Post Hoc comparison was done to decipher whether the differences between groups were significant and they were found to be so at the $P < .05$ significance level. Reliable alliance (15.02), guidance (13.68), social integration (13.4) and attachment (13.4) had significantly higher mean scores. There was no significant difference between these four subscales but they had significantly higher means than reassurance of worth (12.62) and opportunity for nurturance (11.02). Reassurance of worth and opportunity for nurturance had statistically significant lower means.

Research question #2 a [Does the presence or absence of a spouse or significant other affect Phase 3 women’s perception of social support within the Cardiac Rehab environment as shown by total score on SPS?]. The presence or absence of a spouse or significant other was analyzed to see if subjects had different total scores as a result. Two participants left this question blank leaving a total of 33 surveys that could be
analyzed in this way. There were 14 women who acknowledged the presence of a spouse or significant other and 19 women without a spouse or significant other.

Total SPS scores of those women with a spouse or significant other ranged had an average of 76 with a margin of error +/- 7. I am 95% confident that the true average for women with a spouse lies between 69 – 83. Those women without a spouse or significant other had an average of 83 with a margin of error +/- 3. I am 95% confident that the true average for women without a spouse lies between 80 - 86. Those women without a spouse or significant other were found to have higher average mean scores than those women who had a spouse of significant other. A one-way ANOVA was performed to see if the different means were significant. They were found to be suggestive (p=.082) of differences, but they were not significant. Those women without a spouse or significant other were found to have a generally higher perception of social support within the Cardiac Rehab facility.

Research question #2 b [Does the absence or presence of a spouse or significant other affect Phase 3 women’s perception of social support within the Cardiac Rehab environment as shown by scores on each of the six subscales?]. An analysis was computed to determine whether there was a difference between total subscale scores and the absence or presence of a spouse. Those women who indicated the presence of a spouse or significant other had the following subscale mean score; guidance (13.28), reassurance of worth (11.85), social integration (12.57), attachment (12.71), opportunity for nurturance (10.64), and reliable alliance (15.28). Those women without a spouse or significant other had the following means out of 16 possible for each subscale; guidance
Higher mean scores for each subscale were found amongst women without a spouse or significant other. A one-way ANOVA was completed to determine whether those differences were statistically significant and if so, among which of the subscales. The results suggest a difference with higher means scores within the subscales of guidance, \( P = .085 \) Reassurance of worth, \( P = .086 \) and social integration, \( P = .075 \). No differences were found within the subscales of attachment (.191), opportunity for nurturance (.366) and reliable alliance (.631). (See Table 3)
### ANOVA

<table>
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<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
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<td></td>
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<td>344.511</td>
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<td><strong>Guidance</strong></td>
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<tr>
<td>Between Groups</td>
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<td>10.390</td>
<td>3.174</td>
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<tr>
<td>Within Groups</td>
<td>101.489</td>
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<td><strong>ROW</strong></td>
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</tr>
<tr>
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<tr>
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<td></td>
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<tr>
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Table 3. Total SPS mean scores and subscales as measured by ANOVA for significance.

* = statistically significant (p < .05)  + = statistically suggestive (p = <.10)

**Research question #3 a** [Are there different perceptions of social support among urban and rural cardiac rehab centers as shown by total score on the SPS?].

Using the MSA participating centers were divided into rural and urban Cardiac Rehab centers. Two urban centers participated with a total of 10 subjects. Six rural centers
participated with a total of 25 subjects. Rural centers had a total SPS average score of 82.72 with a margin of error +/- 2.7. I am 95% confident that the true average for rural centers lies between 80–85. Urban Rehabs had a total SPS average score of 69.3 with a margin of error +/- 9.6. I am 95% confident that the true average lies between 60–79. An ANOVA was done to see these differences were significantly different. Rural Cardiac Rehabs had significantly higher mean total scores (P = .001).

(See Table 4 & 5.)

**Research question 3 b [Are there different perceptions of social support among urban and rural cardiac rehab centers as shown by scores on each of the six subscales?]** Rural Cardiac Rehabs participants had the following subscale mean scores; guidance (14.36 ME +/- .6), reassurance of worth (13.36 ME +/- .9), social integration (14.20 ME +/- .7), attachment (14.04 ME +/- .7), opportunity for nurturance (11.56 ME +/- 1.1), and reliable alliance (15.20 ME +/- .45). Women at urban centers had the following subscale average scores; guidance (12.10 ME +/- 1.8), reassurance of worth (10.6 ME +/- 2.5), social integration (11.40 ME +/- 2.3), attachment (11.2 +/- 2.1), opportunity for nurturance (9.40 ME +/- 1.8) and reliable alliance (14.60 ME +/- 1.0).

(See Table 4.)
An ANOVA was performed to determine whether there were any statistically significant differences between rural and urban Cardiac Rehab participant subscale scores. Rural participants scored significantly higher on the subscales of social integration ($P = .004$), attachment ($P = .002$) and reassurance of worth (.016). Differences were suggested with guidance ($P = .006$), and Opportunity for nurturance (.051). There were no significant differences in the subscale of reliable alliance (.237).

(See Table 5)
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Table 5. Total SPS scores and subscale means or rural and urban participants analyzed for significance by ANOVA. * = statistically significant (p = <.05) + = statistically suggestive (p = <.10)
Chapter V: Discussion

Overview

In addition to the results reported in the previous chapter, some participants voluntarily offered additional information to the surveys. They wrote in their own words about their experience in Cardiac Rehab. Their words confirm the study’s results and give them strength.

The fact that these women offered unsolicited responses validating their experiences in cardiac Rehab warmed my heart on a personal and professional level. I worked as an Exercise Specialist for three years as a member of a Cardiac Rehab team and it was rewarding to see other Cardiac Rehab professionals recognized by the population they work so hard to serve. Results show that their hard work is perceived as a positive source of social support in these women’s lives. Acknowledging and recognizing the supportive relationships within this environment enhances the value of every person’s role and further encourages a mutually beneficial environment.

Demographics

The only demographic variable asked of the women was the absence or presence of a spouse or significant other. Thirty three women out of the 35 answered this question. One woman claimed her daughter as her significant other and another woman stated that she was a widow. This information was offered for a simple yes or no question. This speaks to the true complexity of such a question. Asking for a “yes” or “no” does not paint a complete picture of a life or the people within it. I can only imagine why two of the answers were left blank - perhaps the patient was recently widowed, or felt that the definition of spouse, or significant other, was limited to a married partner.
Research question #1a and 1b [How do women in Phase 3 Cardiac Rehab programs perceive the level of social support with the Cardiac Rehab environment as measured by total score on SPS and by total scores on each of the 6 subscales?].

This study found that women participating in Cardiac Rehab Phase 3 maintenance programs perceive the Cardiac Rehab environment to be a significant source of social support. One woman with no spouse from an urban Cardiac Rehab wrote in the column of this survey, “I have very caring people around me.” These few words echo the findings which indicate that women in Cardiac Rehab maintenance programs feel that they can rely on staff to help them when, and if, they need it (as measured by reliable alliance), and that they feel they are offered guidance in the form of instruction and tangible aid. They also appear to have developed relationships with staff and peers (as measured by attachment), and feel that they belong to a group, identifying themselves with one another (as measured by social integration).

The four subscales reliable alliance, guidance, attachment and social integration had statistically significant higher mean scores when compared to opportunity for nurturance and reassurance of worth. These provisions appeared to have not been as valuable to the participants as the other subscales.

One woman from a rural Cardiac Rehab took it upon herself to write a separate letter and included it with her survey.

“I feel that more people should be aware of Cardiac Rehab. It can be a great help for people after surgery or other heart problems. Plus it is so important to have the correct type of program director and any staff. They should have a caring and pleasantly fun personality, as well as knowledge. The people that attend all have something in common,
the need to feel better. By doing the exercise under supervision they receive in the program and continuation of health and wellness program. My friends and family all agree it has done wonders for me."

**Research question #2 a and 2b [Does the absence or presence of a spouse or significant other affect Phase 3 women’s perception of social support within the Cardiac Rehab environment as shown by total score on SPS and total scores for each of the six subscales?].** The women without a spouse, or significant other, perceived a higher amount of support from the Cardiac Rehab environment than participants having a spouse or significant other did. Results were not found to be significant, but they suggest that a larger sample size may find definitive differences. It may be that the women without a spouse, or significant other, gather more support from their time at Cardiac Rehab than those who have a spouse or significant other do. Results suggest that the women without a spouse may perceive a higher amount of social support in the subscales of guidance, reassurance of worth and social integration. They may look to Cardiac Rehab staff and peers to help them recover, and cope with new changes, as a results of a cardiac event - more so than those women with a spouse. These women may look for and receive feedback about themselves that helps them regain their self esteem. Identifying with each other may create an air of survivorship allowing the women to rely on each other to maintain their goals towards a heart healthy lifestyle.

One of the only women with a spouse or significant other who sent a personal note illustrates the challenges women struggle with in maintaining their own health and balancing the roles that they play within their family life.
"I have built endurance during this season in my life. I was only 46 years old when I became ill, now 48. I am back working and working out for me! Everyone else's needs were always first. I have learned from my heart failure. Now I am working on not falling back into the same trap."

Research question #3a and 3b [Are there different perceptions of social support among urban and rural cardiac rehab centers as shown by total score on the SPS and total scores for each of the six subscales?]. Rural Cardiac rehab centers perceived a statistically significant greater amount of social support than urban centers. Rural Cardiac Rehab participants also perceived a greater statistically significant amount of social integration, reassurance of worth and attachment than those in urban centers. It may be that smaller, rural Cardiac Rehabs provide an opportunity for participants to bond with staff and peers in a way that urban centers do not. Rural locations have fewer participants in general, and that may provide more of an opportunity to form relationships with one another. It may be that Cardiac Rehab provides a place where people can not only stay in touch with one another, but share information about the community they live in and the smaller outlying communities. There were 25 participants from rural sites and 10 from urban sites. These differences in sample sizes may have contributed to the differences found. However, the findings warrant further investigation with a larger sample size.

Conclusion

Social support within the Cardiac Rehab environment. No other studies have surveyed women in Phase 3 Cardiac Rehab programs. While a previous study had used an altered version of the SPS in conjunction with other measures with Phase 3
participants only five of the 64 subject were women: as such gender differences were not found (Woodgate, Brawley & Shields, 2007). For the purposes of their study they found that only two subscales of reliable alliance and guidance were useful and appropriate for the Cardiac Rehab population. They found that those patients who received a higher level of social support in the subscales of guidance and reliable alliance had greater reports of physical health and health related quality of life (HRQL).

In this study it may be that women respond to the SPS survey and questioning about their health perceptions in an entirely different manner than men. This study found the SPS to be a useful tool in creating a dialogue with women about their health and many of them answered by sending in their own personal unsolicited perceptions in addition to the survey. This study found that women in Cardiac Rehab reported higher perceptions of reliable alliance, guidance, attachment and social integration than in the subscales for reassurance of worth and opportunity for nurturance.

It's interesting to note that Cutrona, Russell and Rose (1986) in a study with the elderly found that the overall score on the SPS and scores on reassurance of worth and opportunity for nurturance were directly related to changes in physical health.

**The presence or absence of a spouse or significant other.** This study found that women without a spouse or significant other reported suggestively higher rates of overall perceived social support within the Cardiac Rehab environment and a higher amount of social support in the subscales of guidance, reassurance of worth and social integration.

These findings are intriguing in that other studies have found that women are less likely to have support from their health care providers and spouses when seeking secondary prevention (Caulin-Glaser et al., 2001; Hammond, Habra & Linden, 2000).
Since Cardiac Rehab is a program that focuses on secondary prevention and is provided by health care professionals this study’s findings are inconsistent with the latter in that the health care professionals role is to motivate and support the Cardiac Rehab patient. However, the absence of a spouse or significant other may in some way provide fewer barriers for women in pursuing their own health care prevention.

Franks et al. (2006) found that spouses interact in ways that both support, and attempt to control, their mates when seeking to change their lifestyle habits towards healthier ones. It may be that the women without a spouse are less likely to be deterred from initiating secondary prevention. Lacking the support of a spouse may allow women to seek for and find support in other social arenas. This may help them to affiliate themselves with cardiac Rehab staff and peers (as measured by social integration and guidance), rely on them for feedback, and measure their progress through their interactions with others via social comparison and feelings of self worth (as measured by reassurance of worth).

**Rural and urban Cardiac Rehab Centers.** One previous study compared health educational materials at rural versus urban Cardiac Rehab centers. Eighty seven percent of materials were written at a tenth grade reading level or higher, which is beyond the eighth grade reading comprehension level of the average American adult. There were no significant differences between rural and urban centers (Johnson & Stern, 2004).

Another study by Johnson, Weinert & Richardson (1998) examined factors that influence the use of Cardiac Rehab services by rural residents found that that older adults with greater levels of social support, living in more urban areas, who stated an intent to participate, were most likely to do so. These findings with rural Cardiac Rehab Phase 2
participants echo what other studies have found in that social support of family friends and Health Care workers play an important role in the management of long term illness.

Bettencourt, Schlegel, Talley and Molix, (2007) found that women in rural communities have different breast cancer recovery experiences than urban women. Medical personnel, health care providers, friends and neighbors within their rural community become important sources of social support. Most of the women felt that they would not trade the support of their rural community for the convenience of living in an more urban setting. Once women returned from treatment to their rural community they sought out the social support of other breast cancer survivors.

This study found significant differences in the perceptions of women in rural Cardiac rehabs than those in urban ones. Rural women reported significantly higher perceptions of total social support and in the subscales of social integration, reassurance of worth and attachment. These findings are somewhat consistent with Bettencourt, Schlegel, Talley and Molix (2007) in that rural women may have different perceptions of the rehabilitative environment than urban women and they may each pull different salient meanings from that environment. However, all of the Phase 3 women who participated in this study perceived the Cardiac rehab environment as a place where they felt a high level of social support from peers and staff.

**Recommendations For Future Research**

The findings from this study, coupled with the enthusiastic response generated by the Cardiac Rehab professionals who helped in this study and the Phase 3 women who participated, warrant more research in this area. Only one in every four studies done by the NIH identifies gender specifics between men and women. Heart Disease is the
number one killer of women. Less women are referred to Cardiac Rehab following a cardiac event and once there, women are five times more likely to drop out of the program.

I would suggest that future studies look at asking questions or interviews that evoke a personal response, as many of the women wanted to add their own words to explain and illustrate their struggles and their sources of social support.

The perception of social support is often more important than actual available forms of structural support. Many or all of the Cardiac Rehabs that participated in this study may have state of the art equipment and facilities, but this study shows that the Cardiac Rehab environment and the perception of social support among staff members and peers may be the most valuable part of a program. Patients arrive in Cardiac Rehab in various raw emotional states having nearly lost their lives. The vulnerability that many feel is shared by others who have experienced it. Patients spend large amounts of time encouraging one another and witnessing each other meet goals. Staff members give guidance, and help patients with the new, often intimate changes to their post cardiac event lifestyle.

The environment is one of change, as many patients are examining their lifestyle choices and habits, and dealing with the challenges that come from changing long-standing behaviors. These changes do not come easily and many personal issues arise from making a concerted effort to do so. For these reasons these relationships become more than your typical health care provider relationship as all are motivated, as one participant said “by the need to feel better.” It is the Cardiac Rehab professional’s job to help patients move towards this goal 2 to 3 times per week. Phase 3 patients have
undergone at least 3 months of telemetry monitored exercise and have endured the vulnerability of new life changes and stresses. Once in Phase 3 they can leave at any time but they choose to stay because of the social support present within the facility and the connections they have formed with their peers.

Rural patients feel a greater perception of overall social support, social integration, attachment and reassurance of worth. Having been a member of a rural Cardiac Rehab team, I can only speak of my own experience when attempting to elaborate upon what these findings might mean. It may be that many of the rural participants know each other outside of the Cardiac Rehab experience, as members of a small community. As such they may know things about each other’s lives before this experience. Living in a small community, the chances are higher that staff and patients will see each other outside of the Cardiac Rehab environment and this constant presence or potential interaction may keep the goals and habits talked about within the rehab facility at the forefront of their minds on a more regular basis.

I used to joke with my husband before I left for work that I was, “off to get the history, daily news and weather.” Many patients arrived with stories about the past few days, or shared an oral history of places and people I had never seen nor met. Rural Cardiac Rehabs may in some ways become places that share the same aspects of a club, in that members share personal history (social integration), form bonds (attachment) with one another and are in some way fed by their participation (reassurance of worth) and the support that they are able to offer others.

The results from this study highlight the importance of social support within the Cardiac Rehab facility. Knowing that women perceive the Cardiac Rehab environment in
a positive light, Cardiac Rehab professionals can help facilitate enrollment by focusing on this additional benefit gained through participation in the program and perpetuating this message into the surrounding community. The goal of the Cardiac Rehab professional is to reach as many people as possible with the heart healthy living message. This study highlights the importance of Rural Cardiac Rehab facilities, warranting the development of more rural facilities to help more people live healthier, self-sufficient lives.
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Appendix
Descriptive Protocol

The goal of this research is to assess the perceived social support of Phase 3 women participating in Cardiac Rehab programs in the state of Oregon. Cutrona and Russell’s Social Provisions Scale (1984) will be used to examine levels of perceived social support within the Cardiac Rehab environment. After an individual has suffered a Cardiac event they are referred to a Phase 2 Cardiac Rehab program where they undergo telemetry monitored exercise. Phase 3 participants are those who have graduated from a Phase 2 program. They have been cleared for exercising on their own but they continue to exercise in the Cardiac Rehab Phase 3 maintenance program. Few studies have looked at Phase 3 patients and even fewer have looked at the perceived social support of the Cardiac Rehab environment for women. Cardiovascular disease is the number one killer of American women and yet the number of women referred and present in Cardiac Rehab programs does not reflect this knowledge.

Cardiac Rehab Program directors in the state of Oregon will be contacted by telephone. The purpose of this study will be explained to them and they will be asked to participate in this study. If they consent they will be mailed Cutrona and Russell’s Social Provisions Scale (1984) and asked to give them to Phase 3 women as they arrive in Cardiac Rehab. The willing Cardiac Rehab professional will explain the purpose of the survey (oral consent) and a written copy will be given with each survey to subjects. The researchers contact information will be provided for those who have questions about the study. The Cardiac Rehab professional will return the results in the self addressed
stamped envelope and returned to the researcher. The only personal data collected will be the absence or presence of a spouse or significant other.

Subjects will be told that their participation in this survey will help to examine current levels of perceived social support within Cardiac Rehab programs in Oregon and may help Cardiac Rehab professionals to find ways to better assist and encourage the involvement of more women. Each subject will place their completed survey in a blank envelope and seal it. These envelopes will insure the confidentiality of their responses among the Cardiac Rehab staff. The staff members will then collect the envelopes and mail them back in the larger manila envelope provided.
Request For Waiver Of Written Informed Consent

I request a waiver for written informed consent. No personally identifiable information will be requested of subjects in this survey research. Written informed consent would identify each individual in a way that I wish to keep confidential. A copy of the oral consent form will accompany each survey.

Oral Informed Consent

Your participation in this survey will help Cardiac Rehab professionals to examine and discover ways to provide social support for women participating in Phase 3 Cardiac Rehab exercise programs in the state of Oregon. The results from these surveys will become my Masters project in Kinesiology at Sonoma State University in Northern California. All information gathered in this survey will be kept strictly confidential and there will be no way to identify the individuals who participate.

Your decision to participate in this survey is totally voluntary. Please respond to each question as it pertains to the Cardiac Rehab environment. Please be as truthful and honest as you can. The survey should take about 20 minutes to complete. After you have completed the survey please fold and seal it in the blank envelope provided and return to the Cardiac Rehab professional.

If you have any questions or concerns please contact Jennifer Scott at (541) 399-3147
Thank you very much for your time!

Sincerely, Jennifer Scott
Dear Cardiac Rehab professional,

Thank you for being willing to help me with this study. Here is a little information about myself and the purpose of this study. Please post this in a place where exercise participants can see it. Hopefully this will address any questions that they may have. Please return the surveys to me by September 1st. I hope that this collaborative effort will fuel some healthy discussion!

The Perceived Social Support of Phase 3 Women within Cardiac Rehab Programs in Oregon

My name is Jennifer Scott. I am a Masters student in Kinesiology at Sonoma State University in Sonoma County, California. I have worked within the health and exercise field for many years and have worked with a variety of different populations. Most recently I worked as a Cardiac Rehab Exercise Specialist at Providence Hood River Memorial Hospital, where the seed for this study was planted and grew.

First off, thank you for participating. You are one of the many Oregon Cardiac Rehabs that have graciously agreed to help me with this study.

Having been a member of a cardiac rehab team I know how important the commitments you have made to be present and consistently involved in Cardiac Rehab are. I am curious to see how women in Phase 3 Cardiac Rehab perceive the social support of the staff and peers within the Cardiac Rehab environment. Participation in this study may help Cardiac Rehab professionals find better ways to assist and encourage the involvement of more women in Cardiac Rehab programs.

Thank you so much for your help! Keep on Moving!

Jennifer Scott ©
Informed Consent Attached to Cardiac Rehab SPS Survey

Your participation in this survey will help Cardiac Rehab professionals to examine the types of social support perceived by women within the Cardiac Rehab environment. This will hopefully help us to find ways to better assist and encourage the involvement of more women in Cardiac Rehab programs. This survey will be given to women in Phase 3 Cardiac Rehab exercise programs in the state of Oregon. The results from these surveys will become my Masters project in Kinesiology at Sonoma State University in Northern California. All information gathered in this survey will be kept strictly confidential and there will be no way to identify the individuals who participate.

Your decision to participate in this survey is totally voluntary. Please respond to each question as it pertains to the Cardiac Rehab environment. Please be as truthful and honest as you can. The survey should take about 20 minutes to complete. After you have completed the survey please fold and seal it in the blank envelope provided and return to the Cardiac Rehab professional.

If you have any questions or concerns please contact Jennifer Scott at (541) 399-3147 cyclescotts@gmail.com

Thank you very much for your time!

Sincerely, Jennifer Scott 😊
Original Social Provisions Scale

© Daniel Russell & Carolyn Cutrona, 1984

Instructions: In answering the following questions, think about your current relationships with friends, family members, co-workers, community members, and so on. Please indicate to what extent each statement describes your current relationships with other people. Use the following scale to indicate your opinion.

STRONGLY DISAGREE  DISAGREE  AGREE  STRONGLY AGREE
1  2  3  4

So, for example, if you feel a statement is very true of your current relationships, you would respond with a 4 (strongly agree). If you feel a statement clearly does not describe your relationships, you would respond with a 1 (strongly disagree).

Rating

1. There are people I can depend on to help me if I really need it.

2. I feel that I do not have close personal relationships with other people.

3. There is no one I can turn to for guidance in times of stress.

4. There are people who depend on me for help.

5. There are people who enjoy the same social activities I do.

6. Other people do not view me as competent.

7. I feel personally responsible for the well-being of another person.

8. I feel part of a group of people who share my attitudes and beliefs.

9. I do not think other people respect my skills and abilities.

10. If something went wrong, no one would come to my assistance.

11. I have close relationships that provide me with a sense of emotional security and well-being.

12. There is someone I could talk to about important decisions in my life.

13. I have relationships where my competence and skill are recognized.
14. There is no one who shares my interests and concerns. 

Rating

15. There is no one who really relies on me for their well-being. 

16. There is a trustworthy person I could turn to for advice if I were having problems. 

17. I feel a strong emotional bond with at least one other person. 

18. There is no one I can depend on for aid if I really need it. 

19. There is no one I feel comfortable talking about problems with. 

20. There are people who admire my talents and abilities. 

21. I lack a feeling of intimacy with another person. 

22. There is no one who likes to do the things I do. 

23. There are people who I can count on in an emergency. 

24. No one needs me to care for them. 

Scoring:

A score for each social provision is derived such that a high score indicates that the individual is receiving that provision. Items that are asterisked should be reversed before scoring (i.e., 4=1, 3=2, 2=3, 1=4).

1. Guidance: 3*, 12, 16, 19* 

2. Reassurance of Worth: 6*, 9*, 13, 20 

3. Social Integration: 5, 8, 14*, 22* 

4. Attachment: 2*, 11, 17, 21* 

5. Nurturance: 4, 7, 15*, 24* 

6. Reliable Alliance: 1, 10*, 18*, 23
Social Provisions Scale For Cardiac Rehabs

© Daniel Russell & Carolyn Cutrona, 1984

Do you have a spouse or significant other? ________________

Instructions: In answering the following questions, think about your current relationships with Cardiac Rehab staff and other patients. Please indicate to what extent each statement describes the Cardiac Rehab environment. Use the following scale to indicate your opinion.

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<thead>
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<th>STRONGLY DISAGREE</th>
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<th>AGREE</th>
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<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

So, for example, if you feel a statement is very true of your current relationships within the Cardiac Rehab environment, you would respond with a 4 (strongly agree). If you feel a statement clearly does not describe your relationships, you would respond with a 1 (strongly disagree).

Rating

1. There are people I can depend on to help me if I really need it. __________
2. I feel that I do not have close personal relationships with other people. __________
3. There is no one I can turn to for guidance in times of stress. __________
4. There are people who depend on me for help. __________
5. There are people who enjoy the same social activities I do. __________
6. Other people do not view me as competent. __________
7. I feel personally responsible for the well-being of another person. __________
8. I feel part of a group of people who share my attitudes and beliefs. __________
9. I do not think other people respect my skills and abilities. __________
10. If something went wrong, no one would come to my assistance. __________
11. I have close relationships that provide me with a sense of emotional security and well-being. __________
12. There is someone I could talk to about important decisions in my life. _________
13. I have relationships where my competence and skill are recognized. _________

**Rating**

14. There is no one who shares my interests and concerns. _________
15. There is no one who really relies on me for their well-being. _________
16. There is a trustworthy person I could turn to for advice if I were having problems. _________
17. I feel a strong emotional bond with at least one other person. _________
18. There is no one I can depend on for aid if I really need it. _________
19. There is no one I feel comfortable talking about problems with. _________
20. There are people who admire my talents and abilities. _________
21. I lack a feeling of intimacy with another person. _________
22. There is no one who likes to do the things I do. _________
23. There are people who I can count on in an emergency. _________
25. No one needs me to care for them. _________

*Please place this survey in the blank envelope available and return to the Cardiac Rehab Professional.*

Thank you for your participation in this study! 😊

Keep on moving!
## SPS STATISTICAL RESULTS

### ONE WAY

#### ANOVA

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*. The mean difference is significant at the 0.05 level.
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### Histogram

**SEARCH FOR DIFFERENCES BETWEEN SPOUSE / SIG OTHER & NO SPOUSE / SIG OTHER**

**ONE WAY**

### ANOVA

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**Report**

New Total

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## MEANS

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